Mutton Birds
AND
Other Birds

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Shag on eggs - Faire Isle.

MUTTON BIRDS AND OTHER BIRDS

By

H. GUTHRIE-SMITH

Author of "Crispus,"
"Birds of the Water, Wood, and Waste."

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To

HARRY W. G.-S.

PREFACE.

IN the following chapters a part of the bird life of a part of one of the great natural sanctuaries of New Zealand has been sketched, and without undue egotism the writer may be allowed to plead, at least the poor excuse, that half a loaf is better than no bread. At any rate the volume will have been, in his opinion, justified, if the charms of our wild lands, and especially of Stewart Island, can be passed on to other New Zealanders.

'Back to the land' is the soundest of all political cries, but more than that is required. 'Back to the wilds' is what will bring to each who makes the trial, the happiness that brings no later regrets, from which all troubles will be forgotten, and which, unlike any other portion of our lives, will leave the memory only of its pleasures behind. Assuredly in this twentieth century we are attempting an over-civilisation, and men have almost come to believe that to walk all day in streets or to sit at ledger and desk is the natural lot. He who so thinks has lived but half his life—he has failed to enjoy the savage latent in himself. It is hearing and sight,—those most ancient senses in the frame of man, that give in their exercise the fullest joy, and to listen and watch are more than to think.

But what do we see and what do we hear, and what through our eyes and ears do we not owe to the masters of verse? It has become impossible in prose to witness a great sea rolling into a shallow bay, to think of woods lashed with rain, of wind among the dunes, of grey and dewy turf whose greener markings show where wild things have trod at dawn, of sudden airs that dim the shadows of a water expanse and shiver in silver along its blue, of noon in summer when green tendrils flag. The breezes stream and the seas flow; but they bear a new meaning and a new melody, something the savage has never known. Perhaps only in this are we moderns the happier breed of men; that the poets are as Eolian harps through which our primitive senses pass. To each phase of nature, sweet or severe, are added apt images, tender thoughts and sequences of immortal words. Away from our fellow men and alone, what can we see or hear or feel that is lovely and pure and of good report, without a flow of thoughts that are not our own?

My companions and helpers in earlier sojournings in Stewart Island were bushmen and fisher folk; but during the spring and summer of 1911 I had for assistants J. C. McLean, with whom I had previously worked, and John Leask, owner of the little craft—"Te Atua." Than John Leask we could have got no better man, for he knew from life-long experience what could and what could not be ventured reasonably. J. C. McLean was a friend of older standing, and to him again I owe much in the way of help.

I found, too, that he was gifted with the most imperturbable of tempers, "a stoic of the woods, a man without a tear."

No gales that kept us from work could ruffle him. The misfortunes that happened to our nestlings, nests, and eggs, he could accept with a patience impossible to emulate.

He, too, was an enthusiast, and even waist deep in water chilled with melted hail, with the knowledge of a rotten bridge in front and a rising river to swim, was still able to note the discovery of a pair of Orange-Wattled Crows in the flooded scrub.

I acknowledge he beat me there. If I had seen a Moa I should have let it pass, and was but too glad to reach the hut, minus a boot lost in the river, with one foot tied up in my sou-wester, sans camera and gear, soaked with three swims, and chattering with cold.

Archdeacon Herbert Williams has kindly read my proof sheets, and I should like specially to record my gratitude to him for that noble word—retenuitestifectation.

The prints from which the blocks have been prepared are the work of Mr. G. F. Green, who has taken more trouble and expended more care on them than I myself, to whom they belong, would have done. He has turned out work incalculably better than anything I could have shown, and has often proved that, in spite of the proverb, a silk purse can be made out of a sow's ear. I consider myself most fortunate in again having been able to get his help.

Mr. Green has also on my behalf in regard to business matters 'wrestled,' if my friends,

Messrs. Whitcombe and Tombs, will thus allow me to speak of them, 'with beasts at Ephesus.'

The photogravures and tone blocks have again been beautifully done by Messrs. Hood and Co., Middlesbrough, England. Some of the prints necessary to illustrate the text gave but little hope of good results. It is in dealing with these technically defective prints that Messrs. Hood and Co. have done particularly excellent work.

CONTENTS.

Chapter		Page
I.	Sanctuaries	1
II.	Herekopere	10
III.	First Camp on Island	18
IV.	Foveaux Strait	31
V.	Second Camp on Herekopere ...	38
VI.	The Black-backed Gull	44
VII.	The South Island Robin	50
VIII.	The Yellow-eyed Penguin	58
IX.	The Blue Penguin	63
X.	The Woods of Autumn and Spring ...	66
XI.	The Kaka	72
XII.	The Kiwi of Stewart Island ...	84
XIII.	Mason Bay	99
XIV.	Fern-Birds of Rakiahua and Mason Bay	114
XV.	The Rifleman	123
XVI.	On Ulva's Isle	127
XVII.	The Bell-bird	140
XVIII.	The Weka	149
XIX.	Outlawed	162
XX.	A Community of Thieves	175
XXI.	The Yellow-breasted Tit	187
List of Species	... ...	201
Index	... ...	204

LIST OF ILLUSTRATIONS

Shag on eggs—Kane-te-toe ... ...*Frontispiece*

Facing page

Plate I. Headquarters, Half Moon Bay 2
,, II. Hut on Herekopere 4
,, III. Nest and egg of Mutton Bird 8
,, IV. Mutton Bird Chick 10
,, V. Nest and eggs of Kuaka 14
,, VI. Kuaka Chick 16
,, VII. Kuaka—Male and Female in burrow ... 18
,, VIII. Daisy Tree, Herekopere 20
,, IX. Hut on Islet in Foveaux Strait 22
,, X. Parara in burrow 26
,, XI. Nest and egg of Parara 28
,, XII. Parara Chick 32
,, XIII. Cut-leaf Bracken 34
,, XIV. Titi Wainui in burrow 36
,, XV. Nest and egg of Titi Wainui 38
,, XVI. Skua's egg on bed of Sedum—Kane-te-toe 40
,, XVII. Skua Nestlings, Herekopere 42
,, XVIII. Nest and eggs of Black-backed Gull ... 44
,, XIX. Chicks of Black-backed Gull 46
,, XX. Black-backed Gull on eggs 48
Male Robin 50
,, XXI. Pair of Robins—Female sitting 52
,, XXII. Female Robin 53
,, XXIII. South Island Robin on nest 54
,, XXIV. South Island Robin on nest 56
,, XXV. Yellow-eyed Penguin disturbed 58
,, XXVI. Tufted Penguin, probably about to moult 59
,, XXVII. Yellow-eyed Penguin on nest 60
,, XXVIII. Nest of Yellow-eyed Penguin 61
,, XXIX. Egg and newly-laid egg of Blue Penguin 63
,, XXX. Blue Penguin on nest 64
,, XXXI. Umbrella Ferns 66
,, XXXII. Rakiahua Valley—Ruggedy Range in distance 68
,, XXXIII. Filmy Ferns 70
,, XXXIV. Stage in front of Kaka's nest 72
,, XXXV. Kaka spying through key-hole entrance 76
,, XXXVI. Kaka nestlings—section of tree trunk removed 80

LIST OF ILLUSTRATIONS

		Facing page
Plate XXXVII.	Kaka on nesting tree	82
,, XXXVIII.	Kiwi Chick	84
,, XXXIX.	Debris of vacated Kiwi's nest	86
,, XL.	Kiwi and Chick	88
,, XLI.	Kiwi and Chick	90
,, XLII.	Kiwi Lodge	92
,, XLIII.	Entrance to breeding burrow of Stewart Island Kiwi	96
,, XLIV.	New Zealand Dotterel on eggs	100
,, XLV.	Dotterel—showing borings in foreground	104
,, XLVI.	Nest of Dotterel	106
,, XLVII.	Nest of Dotterel	108
,, XLVIII.	Homestead, Mason Bay	112
,, XLIX.	Launch on River—Rakiahua	114
,, L.	Camp at Rakiahua	117
,, LI.	Male Fern Bird seated on top of female—eggs in act of hatching	118
,, LII.	Fern Bird—Rakiahua	119
,, LIII.	Fern Bird, showing tail shafts—Mason Bay	120
,, LIV.	Fern Bird's eggs—Rakiahua	121
,, LV.	Fern Bird—Mason Bay	122
,, LVI.	Rifleman	124
,, LVII.	Hen Auriceps Parrakeet	128
,, LVIII.	Auriceps Parrakeet about to enter nest ...	132
,, LIX.	Parrakeets eating almonds	136
,, LX.	Nest and eggs of Bell-bird	140
,, LXI.	Hen Bell-bird on nest	144
,, LXII.	Stewart Island Weka stealing handkerchief	150
,, LXIII.	Stewart Island Weka about to examine debris of Kiwi's nest	156
,, LXIV.	Mosses and Filmy Ferns	160
,, LXV.	Pied Shags	164
,, LXVI.	Pied Shag	168
,, LXVII.	Pied Shags and nests	172
,, LXVIII.	Kane-te-toe	176
,, LXX.	Shag on nest—Kane-te-toe	177
,, LXXI.	Pair of Shags—Kane-te-toe	178
,, LXXII.	Nest and eggs of Shag—Kane-te-toe ...	180
,, LXXIII.	Shag Alleyways—Kane-te-toe	182
,, LXXIV.	Nesting Plateau—Kane-te-toe	184
,, LXXV.	Female Yellow-breasted Tit	188
,, LXXVI.	Male Yellow-breasted Tit	190
,, LXXVII.	Spider Orchids	194

Mutton Birds and other Birds.

Chapter I.

SANCTUARIES.

FROM the date on which the first Moa bone was brought to England, the Avifauna of New Zealand has excited a peculiar interest. There was a romance of science in that paper where, against the advice of friends, Owen staked his reputation on the interpretation of a single bone; and more learned papers have perhaps been written about our Kiwis than about any other family of birds in the world. The enormous period of time during which New Zealand has been isolated, has given her birds time for a high degree of specialisation; and by scientific ornithologists our Dominion, small as is its extent, has been considered the most striking and most essential of the six regions into which the bird life of the world has been apportioned. Our birds will fit into no well-ordered groups: our Thrushes are hardly Thrushes, our Crows are hardly Crows, our Starling is hardly a Starling. The trusteeship of these rare creatures is in our hands, and it is worth

while to consider to what extent the distinction has been deserved and the responsibility honoured. It is well also to consider what steps can be taken, even at this, the eleventh hour, to save our remaining species; and I should here like, firstly, to state my emphatic belief that this subject should be altogether removed from the field of sentiment, and secondly, to plead with Mrs. Gamp that if I do call my fellow-citizens names it is only done to 'rouse them.' It may be at once admitted that humanity can survive without the rarer and more recluse birds. The race could exist without the more beautiful orders of flowering plants, without music, and without art, but if anything is true it is that 'man does not live by bread alone.' We do not most highly prize the necessaries of life, but rather the delicacies of taste and sight and hearing, —the pleasures of our leisure hours.

This modest claim, I think, may be fairly urged in regard to birds, that by the extirpation of species, a potential source of happiness is denied to the coming generations, and furthermore, that without the possibility of full investigation structures may be forever lost that bind the present to the past. I believe myself there is no more cruelty in the killing of Humming-Birds than in the slaughter of Turkeys. The awful difference lies in this,—that in the one case there is the possibility of the annihilation of a species and in the other no likelihood of such an event. The subject should be one of the living interests of our world, approachable without crocodile tears, and to be dealt with as men of the world deal with affairs of the world. Perhaps bird-nesting is to be condemned, but often I

Headquarters, Half Moon Bay.

think it is, like the fear of the Lord, the beginning of wisdom. Perhaps shooting is to be condemned, but it is certain that species to which an intelligent commercial interest has become attached are most sure of survival. Perhaps the taking of life in any way is to be condemned, but if Humming Birds and Birds of Paradise were bred for the market, as capons and beeves are bred, the most lovely species of birds would be as safe to the race as barndoor fowls.

Indeed, I often think that birds have been but ill served by their friends and are unfortunate in their literature. Much of it is childish, much of it is maudlin. There are the writers whose science is, I sometimes suspect, only a knowledge of Latin names, and who chill their theme with a foreign nomenclature. There are folk like myself, who can see perhaps, but whose observation is little better, alas, than the observation of the keen-eyed savage, and who lack the special training and wide comparative knowledge which alone can truly inform and without which the springs of action can hardly be quite fully understood. Lastly, there are the great workers in the field of ornithology—men who devote a lifetime to a single branch of the subject—and to them each student's hat must rise in honour and respect. The intellect is often apt to burn the emotions out, or maybe they do not often co-exist with equal force in the same individual, but it was one who could both think and feel who mourned over the condition of our New Zealand avifauna as one that "must grieve to the utmost every ornithologist who cares for more than the stuffed skin of a bird on a shelf."

Diminution in the numbers of many species is

inevitable in the settlement of a new country. It is the price paid for the displacement of the thistle and thorn in favour of the vine and the fig tree, but although thus thinned in regard to numbers it does not follow that the species itself need become extinct, and if we save the species we save all. Sternly, therefore, repressing all sentiment and recognising that the chief end of man, or at any rate man in such close proximity to the millions of the yellow races, is to populate his native land, let us examine the chances of our surviving birds. If it can be proved that we can in no way lose by their preservation,—if it can be shewn that not one acre fit for settlement need be withheld then, indeed, carelessness becomes worse than carelessness. It becomes a disgraceful apathy, and a reproach to every intelligent man in New Zealand.

It can be proved.

It is an easy, if not amiable task to point out mistakes; and, though we now deplore the lack of foresight displayed in the importation of vermin, yet at the time it was scarcely surprising in the face of the plague of rabbits and the threatened ruin of a great industry. It was useless, of course, but men hard-pressed will seize upon any weapon to defend themselves. Twenty-five years ago much might have been written as to the perpetual and enduring nature of the disaster consequent on this importation of pole-cat, ferret, stoat, and weasel; it is scarcely possible, I think, to do that now-a-days. Now-a-days we can but regret that the acclimatisation and spread of these animals has accelerated a destruction of bird life that on the main-land nothing could ultimately prevent. Twenty-five

Hut on Herekopere.

years ago our gum lands and ryolite country, our large tracts of pumiceous land, were held to be worthless. In these localities a quarter of a century ago it might at least have been deemed possible for our birds to have remained in peace but for the vermin liberated. The increasing use of manures has changed this belief, and so wonderful have been the effects of fertilizers that it now appears as if almost the whole of the North Island and almost the whole of the South Island would be taken up for agricultural and pastoral purposes; man will have drained all swamps and low lands, and all ploughable surfaces, however poor originally, will have been fed into productivity by manures. Even the sterile slopes, spurs, and ridges, the high rain-washed flanks of the great ranges, will have been coaxed into carrying the hardier grasses and fodder plants already coming into use. The insatiable appetite for land will swallow almost any kind of soil, and there will remain to the birds an area inconsiderable even in acreage and meagre to the last degree in food supply. Almost all scrub and bush will have been fallen, for, if, even in the palmy days of the squatter and when taxation was light, the great land-holder could hardly bear to leave untouched a score or an hundred fertile acres, what can be expected of the farmer? For five extra blades of cocksfoot he would scalp his parents.

As bird refuges on the mainland, there remain to be considered only the State Forest Reserves scattered here and there throughout the Colony. Perhaps those in high, cold, wet regions may endure, but smaller areas in open country run enormous risks from fire. A

match carelessly thrown down, a fire lighted by picnickers and not properly extinguished,—nay, even the focussing of the sun's rays on broken glass, may each cause in a dry season a blaze that in a few hours will sweep out the growth of centuries and leave a blackened, smoking ruin.

These risks become the greater, too, as the surrounding lands become drier from tillage and the arid north-westers allow not a breath of moisture to remain. Then again, that terrible alien, the blackberry, in many districts is another serious menace to the permanence of the smaller reserves. Its growth will in any case dominate fern, "flax," tutu, and other strong plants; and since the imported birds have become plentiful its seeds are everywhere spread abroad. The damage done is even greater when, by the order of an Inspector of Noxious Weeds, the plants are cut and their stalks and stems at a later period destroyed by fire. Even if lighted in a calm the flames of these fires scorch a margin of green stuff round about and the circumference of the blackened circle increases every year. The blowing of the slightest breath of wind causes immensely greater harm, and leaves a space of bare ground into which the great bramble shoots will next spring, root and establish new centres. It is hardly an exaggeration to say that a blackberry patch growing in light scrub on good soil will, after each fire, double its size. Reserves are, in fact, acquiring a bad name, and instead of local interest in their preservation, there are justifiable complaints that they are mere harbours for mischievous aliens, and that from them the homestead plantations and farm hedges become infested with blackberry seedlings.

An absence of cover and food supply, the subdivision of land, fires and indiscriminate shooting—what in fact may be termed the direct effects of civilisation—must, on the mainland, at no very remote period, almost effect the extermination of the larger and more conspicuous birds. The smaller and more recluse species will mostly succumb to the more indirect effects of colonisation. Of these there are many, and nearly all inimical to avine life. But, although on the mainland, the results, direct and indirect, of civilisation in New Zealand tend towards the killing out of our indigenous birds, yet I think that in the three great natural sanctuaries which still remain, much can be done. The numbers of our birds must diminish with a diminished food supply and a loss of covert,—that is certain. The species themselves may yet be saved I believe, without the retention of one acre fit for settlement.

These sanctuaries are:—Firstly, The Westland National Park; secondly, Stewart Island; thirdly, the islets that lie about our long coast line, and especially the far southern groups. Of these, the Westland National Park—all honour to the Minister who proclaimed it sanctuary—is for all material purposes, the fact requires but to be stated—worthless. It contains only the most noble and varied scenery perhaps in the world; it only affords the most magnificent walking and some of the finest climbing in the Dominion. Stewart Island, the second great natural sanctuary, will be dealt with in the course of the following chapters. It is sufficient now to say that, with

the exception of a small portion about Half Moon Bay, this beautiful island is also worthless for material purposes. Its rainfall is great, and its peats and sands impossible to till or grass. As to the islets and island groups: most of them still remain the property of the nation, but it is property terribly neglected and grossly mismanaged. Are the pitiful rents got for Campbell Island and Enderby Island so necessary to our Treasury that they can weigh against the spoliation by stock of the island vegetation? Is it common sense, is it business to destroy property of potential value for the immediate gain of a few pounds, a few shillings, nay, a few pence a year? Even taking into consideration the handling of the clip, so little is gained in income by the Colony, so little by the ship-owners who carry the few score bales of wool, so little by the merchants who handle the stuff, and finally so little by the tenants themselves, that the leasing of these islands can be compared only to Esau's sale of his birthright for a mess of potage, and the attempt to farm them pronounced a failure.

The fact is, of course, that the question of monetary return has been no inducement to the State. The idea has been to assist the private enterprise of individuals in risky and even dangerous ventures; and as a back-country settler myself, I, at any rate, can have no quarrel with that motive. These leases have, however, been granted without due consideration, and, as before stated, sometimes at least without even attaining their primary object—the benefit of the tenant. If then no benefit accrues to the settler, and a valuable national

Nest and Egg of Mutton Bird.

Flora and Fauna is jeopardised or injured or destroyed, then there is loss to each of the parties concerned, and the management of the whole business must be termed a bungle.

Stewart Island, the islands and islets of our long coast line, and especially the far southern groups, are ideal sanctuaries for the preservation of threatened or rare species. For this purpose they could not be bettered. As pastoral tracts they are a curse to their holders. We are attempting, in fact, to use these islands for purposes for which they are wholly unsuitable. Suggestions, however, concerning areas so large, so far apart from one another, and each moreover with its own problems and perplexities, can only be of value if drawn from local knowledge and experience. Such knowledge and experience the writer cannot pretend to possess, but, in truth, the matter is not one to be dealt with by an individual. It is only the consensus of opinion of a Society, yet lacking in New Zealand —a Society for the Protection of Native Birds and Native Plants in such parts of the Dominion as are otherwise worthless—that can carry weight.

Chapter II.

HEREKOPERE.

ALL Mutton Birds, I was told, lay on November 25th, and such as cannot reach the land at that date drop their eggs during flight, or whilst at rest on the water.

Statements so remarkable, and repeated on all hands, certainly whetted my desire to know more of these members of the Petrel tribe; and at once these too confident assertions proved to be erroneous.

During January, February, and part of March I had many opportunities of visiting the breeding quarters of these and other Petrels both on Stewart Island itself, and on adjacent islets and rocks. Later in the same year, during part of September, the whole of October, and November, and part of December, I was again in these southern latitudes. Thrice also on two of the small wind-swept islets that lie south of Foveaux Strait and east of Stewart Island, camps were established for intervals of varying duration.

These, my credentials, I know, are scanty and sparse, and my remarks as impertinent to the Petrels, as to the inhabitants of a continent is

Mutton Bird Chick.

the volume written on their ways and views by a tripper on a summer tour.

What is required—I shall manage it some day—is a two years' constant residence, and a watchfulness kept up during every day and every night of each of the fifty-two weeks.

Oh, these delightful islets of the south, their clean seas and wooded shores. We were free, beyond recall for days. It was delightful to wake like a child eager for the day, to whom still the world is fresh and to whom each hour brings wonder and surprise, to chew the cud of yesterday's discoveries, the morrow's to anticipate. Then what good fellows were the fishing folk. All my life I have known gillies and gamekeepers to be the best of company, and now I found myself intimately connected with a class of man equally simple and with the same width of outside interests.

Herekopere, or, as it is often called, Te Marama, is one of the many islets that dot the ocean east of Stewart Island. It lies about eight miles out from Half Moon Bay, and consists of perhaps two or three hundred peaty acres. Rising abruptly from deep seas, with here a rock and there a reef maned with bull kelp it is hard of approach except on the west. There beneath the rotting cliffs of red granitic schist, stretches a pebbled beach, the enormous pebbles piled deep on one another, the smallest larger than a moa's egg, and thousands larger than a giant's head; they are round and perfectly smooth, their great weight, I suppose, preventing the slide that gives to shingle on shelving shores, its characteristic form.

This beach lay almost directly beneath the

hut where we camped, and it was magnificent in a heavy sea, to listen to the growl and rumble of these pebbles, tossed and boiling in the surf.

Herekopere is a favourite breeding resort of Petrels of many kinds, the surface possessing attributes not apparently to be found in such perfection on the neighbouring islands. Perhaps the blanket of peat may be more deep, perhaps the granite grit of a more porous character. Petrels, at any rate, breed on it in hundreds of thousands, and comparatively neglect equally suitable looking islands, distant but half a mile, and a mile. The character of its soil varies with the contour of each part. On the flat uplands it is almost pure peat; on the steep slopes and where scrub grows there is an admixture of leaf mould, and on the crumbling face of the granite cliffs it is chiefly decomposing schist. Everywhere the land is exceedingly fertile, greasy with oil and bird manure, and enriched with centuries of moulted down. Immense numbers of birds, too, perish from time to time, as for instance when to my knowledge in 1911 scores of thousands of Kuaka in the down died of starvation.

Each season also multitudes of alighting birds are, like Absalom, caught by the head in the forks of trees, or snared by the wing or foot in the tangles of black vine.

Although over a quarter of its surface light bush grows, there is not one large tree on the island. The average height of the Herekopere scrub is twenty or twenty-five feet, and the mixed species of which it is composed, prefer the centre and more sheltered parts. These low woods tail off usually into thickets of the

branched nettle, well named Ferox. Three or four kinds of fern, the New Zealand spinach, trailing rankly where an overhead gap affords light and air, make up with a few other plants the little-varied undergrowth.

Ferns, however, in these Mutton Bird islands never seem to me to be happy. They can tolerate, but cannot enjoy the salt of the blown spray and the hot stimulus of bird-droppings.

The whole southern slope of the island, often precipitous, and everywhere cumbered with slabs of granite, is a tangle of black vine, stranded, knotted and coiled, whilst amongst and above it grow clumps of veronica with green wood only at the top.

Near the wharés, and possibly where a clearing may have been once attempted, grows a dense meadow of the strong, handsome island grass. Another patch of this grass, less dense and rank, has taken possession of the eastern headland of the island, where some years ago the peat was accidentally fired, and where it continued for some days to smoulder.

Elsewhere the uplands of peat sustain a crop of low cut leaf bracken, its growth different indeed from the magnificent pea-green shoots that in spring uncurl alike on the edges of the hot water creeks of the volcanic area and on the high cold beech woods of the Motu and Mangatu. Amongst this bracken's miserable short fronds, apart from one another and with ample room for each to develop his handsome habit, and unaffected on top or side shoot even by the tremendous gales of these regions, grow groundsel trees scattered in park-like isolation. Mutton Bird scrub is its island name, and even

when growing in masses on the cliffs of the islets or on the most wind-swept bluffs of Stewart Island itself, the thick, leathery, white-backed leaves make it a striking plant. In the peat its seed germinates very freely; whereas of the daisy tree, covered in summer with myriads of purple-centred white-petalled blooms, I could discover no young plants in any part of this island. It grows only not much above high-water mark, and like the groundsel tree is totally unaffected by blast or salt spray.

Beside the main tracks radiating from the hut to every quarter of the island, and re-opened by slashers at the beginning of each birding season, there are other trails,—a perfect system of arteries and veins, quite dissimilar to any path of man or beast hitherto known to me. They are bird roads, trails up which the birds flap at dusk, and down which at dawn they pour themselves. On these bird ways there is no grading; the centre of each is rough and clawed, and tends to become in the wet climate of the south a miniature water channel. On either side for a foot or so the vegetation is beaten and peat stained where thousands of eager wings have flapped and bruised the tender fronds of fern, the tips of vine tendrils, the shoots of sprouting grass.

My first visit to Herekopere was late in January, 1911, my companion, a half-caste lad who had been mutton-birding on the island for two seasons. The sea was calm, and the summer day cloudless. Landing, therefore, was easy, and we scrambled eagerly up the steep bank from the rim of giant pebbles, the one of us keen to show, the other to see.

Nest and Eggs of Kuaka.

The whole island smelt of birds, and with the loosening of the dry flax fastening of the whare door it was immediately apparent how numerous they must be. The hut floor was strewn with the bodies of Petrels that had dropped down the great open chimney and been unable to escape. Their carcases were not in any degree offensive, perhaps because of extreme inanition. None of them, moreover, were flyblown; indeed, I do not recollect, either on this occasion or later, a blow fly on Herekopere.

On the island, birds of many species were both very numerous and very tame. In the hut itself a pair of Robins had built, and never before had I been able to identify so many species in so short a time. During our six hours on the island I noted twenty different kinds,—the Wax Eye, Black-backed Gull, Kittiwake, the Sea Swallow, Tui, Yellow Breast Tit, Pied Shag, and another species of Shag, Pigeon, Fern Bird, and Sea Hawk.

We got a Harrier's nest composed entirely of the skeletons of the detached wings of Kuaka fledglings.

The Long-tailed Cuckoo was very plentiful and very noisy. Its screech at this time of the year, almost, as it were, spat forth, so vehement was the utterance, and sometimes it was answered from a distance by a note not unlike a rapid, low tapping or hammering.

About the tall alien mallows and wild oats and sow thistles growing in the vicinity of the hut many Yellow-fronted Parrakeets were feeding. One Weka was heard, but for some reason or another the breed do not on Herekopere display the interest shewn elsewhere in man and his belongings; they are very scarce certainly, but

I think it is remarkable we should not have had their company at our hut on this or on any other visit.

We also got four kinds of Petrel in their burrows,—the Mutton Bird, Parara, Titi Wainui, and the Kuaka. The family affairs of the first-named we found in all stages of progress,—in one burrow a pair of old birds who ran off in a sulking fashion and shamming lameness, in another an egg much incubated, and in a third a very plump chick, clad in grey down, and about three weeks old.

As a matter of fact Mutton Birds, instead of laying their eggs on the 25th November enjoy a rather unusually protracted breeding season, and I myself have got eggs of this breed as late as the end of February.

One or two dead Titi Wainui were found hung up in the scrub; and the twentieth species was made up by a Parara chick which we photographed.

The young of the Kuaka were everywhere dying and dead. About the burrow mouths, amongst the scrub, and on the bird paths along the coasts they lay sometimes seven and eight together. Hunger had driven them forth in the down prematurely, and the death evaded in their holes, had gathered them in the open by tens of thousands, and perhaps by hundreds of thousands.

This enormous mortality must, I think, have been due to a failure of food supply in the immediate vicinity; for with his limited powers of flight this little Petrel would be peculiarly affected by even a local famine.

My next visit to Herekopere was on

Kuaka Chick.

September 22nd, and was brief owing to adverse weather conditions. We found neither the Mutton bird, Titi Waimui, nor the Kuaka in any of the numerous holes probed and examined. The Parara was no doubt sitting, for the noise of the bird disturbed by our footsteps and protesting from the cavernous depths of its burrow was frequently heard; and a fortnight later eggs of this breed just about to hatch were got in several burrows.

It was evident from experience gained in this island that not all, at any rate, of the Mutton Birds laid their eggs on the one day. In order, however, to discover the earliest date upon which this Petrel lays we determined to camp on the islet and particularly to make a point of witnessing the occurrences on the mysterious 25th November—that day on which every Petrel of this breed deposits its egg, "on land for preference, but otherwise on the surface of the ocean."

Chapter III.

FIRST CAMP ON ISLAND.

THERE is no more inspiring prospect than the anticipation of new open-air experiences. I confess I longed to sleep in that wharé over the pebble beach and to wake in the morning with ocean all around, perhaps happily for a few glimmering moments even to believe myself in very truth marooned, at the very least to feel the recollections thronging back of boys' books with their lore of the seas, their bold buccaneers, and pirates bearded and bronzed. They may have had their weaknesses, these brave men; they could not have been wholly bad; for they lived under the wide skies and knew all weather signs, the play of the tides, the portents of the flights of birds. Their habits were quite unconventional; their crimes have delighted generations of boys, and were committed wholly in the open.*

*In spite of an allusion to certain 'playing fields' that might make it seem otherwise, I believe Captain Hook to have been an O.R. *There is no such name as Hook in the School lists of his time.* It was for this reason that the Captain endured the rather heartless allusion to his iron hand. It was in keeping with his character. The whole tenour of his life showed him to have been a man almost painfully anxious to do the right thing. *To have taken another fellow's name would have been simply rotten form, and Hook knew it.* Except when engaged in business the Captain was of a quiet and taciturn disposition, and authors, like other people, can make mistakes. Mr. Barrie may have taken him up wrong or heard him imperfectly perhaps in a general conversation.

Kuaka Male and Female in burrow.

We were early astir to forestall any wind; for often in these parts the local breeze, sometimes fresh and sometimes faint, does not blow up till seven or eight o'clock, and we intended to breakfast on the island. There was little swell on the sea as we left our anchorage in Half Moon Bay, and even the drizzle of a raw morning was unable to damp the hopes of our setting forth.

Before six on October 2nd the "Te Atua" was lying off the island's western shore and opposite the pebble beach. With a rumble of running chain and a splash we had anchored. Our gear was dropped into the towed boat,—camera cases, bread, blankets, lastly McLean and myself and our super-excellent Leask who was to return with the boat.

Steadying her just outside the break, we waited for a big wave, and running in on its back had hauled her out of the surf before another broke and filled her stern.

It had been arranged that our stay on the island should be for a couple of nights, but we had taken five days food supplies in addition. Even then Leask pressed fish hooks on us, and the last heard of him was a yelled reminder from the departing boat to be careful of them, for the last lot of mutton-birders had been storm stayed and nearly starved.

The drizzle had by this time become rain, and through the water laden island grass and up the very steep and very greasy path we carried our stuff. The hut stood on the very edge of the island and overlooked the rocks and beach; half of it was supported on high piles, the other half rested on the levelled soil of the slope. On the landward side extended the narrow lean-to, its

floor very earthy and damp with oozings from the bank above, and along and over which birds ran all night.

Our dog, "Banjo," who had already accompanied us in other expeditions and whom I had again been able to borrow was, until a better place could be found, fastened to one of the piles; but even thus restricted, and away from my restraining eye, he immediately dug out a couple of poor little Kuaka.

Upon unfastening the door we found that even since our last visit many more Petrels had contrived to imprison themselves in the hut.

This was the most comfortable of all our camps; the room was large, the roof quite rainproof; whilst beneath the lean-to was collected an ample supply of dry firewood, permission to use which had been granted by the proprietor. On either side of the open fireplace there was a bunk, and light was admitted by a window at the side and another at the end of the wharé. A short form and several cases served for seats; and during the past mutton bird season children must have accompanied the elders of the party, for on sheets of foolscap there were long lists of words for use in dictation. There was a tattered old "Royal Reader" too, in which I was pleased once more to read the story of the ill-tempered tailor who pricked with his needle the trunk of the elephant, of the officer whose pet tiger licked his hand, and other old friends in prose and verse.

Evidences of bird oil were everywhere,—the table, bunks, and floor stained with its dark markings; the whole island indeed was permeated with the taste and smell of birds. The

Daisy Tree, Herekopere.

cask water, even when boiled, tasted of oil; and the rain which fell every day had at least this advantage that it replenished our tins with clean water.

The one little brook would have been, I am quite sure, unfit for use, draining as it did acres of Petrel burrows.

None of the birds of the island other than the Petrel tribe had yet begun to nest, although the Black-backed Gulls were calling uneasily over the vicinity of their future breeding grounds; and although we found Sea Hawk on the eastern point beginning to resent intrusion, swooping and screaming—if such a designation can be applied to their puny cry, faint even when most furious.

In a deep bay to the north were congregations of Kittiwakes and Sea Swallows also beginning to feel themselves injured by an approach to the chosen site of their future nests. With none of these superterranean species laying, all our work was of a horrid rheumatic troglodytic sort, and rather resembled digging out bogged rabbits than clean bird nesting.

The fierce Parara, very easily distinguished on account of his broad bill with laminated edges, we found to be the most forward of the Petrels. The rather blunt egg was much incubated and peat stained and with its original white changed when dry to a ferruginous red. One sitting bird which we took for identification and which was skinned by McLean turned out on examination to be a male.

The burrow of the Parara varies in length from three to four or five feet, and the egg lies on leaves of "mutton bird scrub" and fragments of cut-leaf bracken, these resting on branchlets and

sticks coated and crusted with dirt. The quantity of material used in nidification was dependent we thought on the condition of the burrow, and from the manner in which the poor material was laid in the centre of the nest hollow it was evident that the egg alone was cared for. There was no attempt at lining the remainder of the burrow's base, and the sitting bird squatted on wet and often soaked peat.

In the exceptionally rainy season of 1911 many of the holes were woefully wet and the roofs and sides of the breeding chambers in the gritty sticky condition of undried plaster work. The birds' tail feathers were draggled and saturated, and incubation must have been a rheumatic business indeed.

We could not discover that any of the small, gentle-natured Kuaka were yet sitting. At this date during the day time most of their little burrows were vacant; only in a small proportion were to be found either a single egg or two birds together. When a pair were together I took the joint occupancy as the earliest stage of housekeeping—settling in, as it were.

There is something very engaging about the little Kuaka, and McLean and I became very partial to him, just as folk feel partiality in an extreme degree to a friend who has something a little ludicrous as well as lovable about him. The little fellow was always so fussy and agitated when, on the high seas, we ran into one of his parties scuttling along the wave tops and plunging with such undignified haste and as if just in time—only just in time—to save a sprawl and somersault. Pity, too, was a factor in our affection, for to a great extent it is to be feared

Hut on islet in Foveaux Strait.

the breed "but subserves another's need." The Sea Hawk and no doubt the Black-backed Gull take him at will, and I have seen the Mollymawk, too, swoop and threaten.

A third kind of Petrel, the Titi Wainui, we also found in occupation of its burrow, but with no egg laid. The nesting habits and burrows of this species are much like those of the Parara, but the bird itself smaller, less fierce in defence, and with the beak much less broad.

The Mutton Bird, in spite of Banjo's nose, and the constant use in scores of likely holes of our supple-jack wand, we failed to locate. There were, in fact, but a very few birds of this species either sitting or in occupation of holes.

To photograph these several kinds of birds it was, of course, necessary to open up their breeding chambers, and however gently and carefully the work was done the birds became restless. Hiding their heads in the dark corners and scraping violently with their feet they refused to face the lens. Then, as their eyes grew accustomed to the light, the birds never ceased to attempt escape, and running up and down the exposed length of chamber soon ruined their beautiful plumage in the clammy peat. Sprawling on the saturated soil, wet above and wet below, with arms and hands engrained with dirt that caked, and could hardly be scraped off, was melancholy work indeed, and a trial even to the enthusiast.

As the afternoon of this our first full day on the island wore on, the birds in their burrows, the Kuaka, the Titi Wainui, and certainly also, though we could not actually locate him, the Mutton Bird, single or in pairs, sitting on eggs

or in occupation only, became more noisy and began to call at more frequent intervals. Our trampling, too, as we moved about the perforated peat seemed to excite or disturb these cave dwellers to a greater degree.

As the light waned this restlessness increased till with the earliest inflight of returning birds a murmur and wail arose from every occupied hole.

We were fortunate in obtaining our first view of the petrel flight under circumstances favourable to eye and ear. The weather had improved, the skies were clear, and, except for the expectant break and the recurrent silence of each wave's ebb, all was still. About seven the earliest of the Kuaka began to arrive; at first here a bird and there a bird; then almost at once it began to hail Kuaka, then to sleet Kuaka, and lastly to snow Kuaka. They reached the island in dozens, scores, hundreds, thousands, hundreds of thousands, and I verily believe perhaps in millions. At first they hurtled themselves in like hailstones, then later fell with some degree of regard to their safety, and lastly lit softly as snow and with hardly a rustle.

Although standing on a conspicuous spot on a rise in open ground and guarding my head and face I was struck by Kuaka eight times in a few minutes. They were dropping thickly into the vines and nettles, the foliosa grass, the soft bare ground, and inland and a little behind me falling like ripe fruit through the branches of the scrub. They were thumping, too, on the wharé roof.

The Kuaka never circles or hesitates, but always flies very fast and straight in from the sea, but the final drop is vertical or not a pane of

glass in the wharé windows could have remained intact.

The difference in the sound of the fall of the early, late, and latest Kuaka may perhaps be ascribed to the altering light: on the other hand it may be caused by the impetuosity of affection, the first comers being perhaps the mates of the single birds in lonely occupation of their holes; the next lot those arriving without intent to select at once; and the last detachment feeling in a lesser degree the influence of love and spring.

This amazing influx of Kuaka continued for about half an hour, although for long after that huge parties of stragglers continued intermittently to arrive.

Each morning we might have gathered them as the Israelites gathered from the wilderness their quail; each morning the bird-fall overnight had landed Petrels in the kerosene tin used for carriage of water—on one occasion there were three birds in it. Every empty box flat on its base contained birds. They fell down the chimney, they floated in our water cask.

A little later than the main body of the Kuaka, the Parara and Titi Wainui began to reach the island in thousands, and Mutton Birds perhaps in hundreds.

The mode of landing of each of these three species was less precipitate, the birds passing and repassing many times over the island, circling and wheeling in enormous loops, now clear against the sky, now lost in the blackness of the land. In every direction, high and low, the sky was crossed by their curves, and the heavens

were like a map marked with the orbits of innumerable stars.

The Mutton Bird, in especial, I could never willingly cease to watch, now high above the island, now barely sweeping clear of the grasses and fern, and at first with never a flicker of wing to break the still evenness of its magnificent flight.

Although well acquainted with the Albatross, I think this Petrel's night flight is almost a finer display of volant power. There seemed to be a pent energy, a fire of restlessness in the bird, the more marvellous because of an entire absence of any perceptible motive power. Maybe it was the glamour of night or that the emotion of the swiftly-wheeling bird moved something in the man not stirred by the vaster, slower balancings in distances more immense of the Albatross.

It was a never-ending interest to follow with the eye one of these living, moving lines of flight, to mark the earthward swoop, to trace it darkling across the island's bulk, to link up once again the half lost curve as it emerged black and distinct against the pale, pure, evening sky.

In each of these giant loops of flight, the bird most nearly touched earth over the mouth of his breeding burrow, but the speed at which the point of attraction was passed, at first gave hardly a hint of any desire to land. After many revolutions there came a time however, when a certain retardation of pace could be marked, and when the faintest hesitant wing flicker, the merest tremor of the extreme tips of the primaries could be observed. Still later, always just over

Parara in burrow

the burrow, this tremor became a poise,—a poise interpolated for an instant in the bird's yet swift unwavering flight, and without apparent check to the speed of the skyward climb, a miracle of balanced flight. At last the bird would drop with a plump through scrub, or rustle with a run into tangles of vine.

Most of these flying Petrels arrived without a call of any sort. The Kuaka was quite silent; the Mutton Bird was also quite silent on this night, although later in the year, but even then very rarely, I have heard him call on the wing,—a call, I may say, entirely dissimilar to the "Te-te-te" and "burr" of the Petrel that during December can be heard at night flying inland over many parts of the east coast of the North Island.

From either the Parara or Titi Wainui, ghost-like in their pale blue plumage now almost turned to white, came a rare "Zp-zp."

About eight or nine o'clock there were hundreds of thousands or, as I have computed, millions, of birds on the island, the vast majority of them being Kuaka. The air was gorged with sound as when bees swarm or lambs bleat in thousands together. Each species was calling its own call, and singing its own song. The predominant sounds seemed to me to be "Ku-ku-kia," endlessly repeated, and a long-drawn "Koe-koe-oe-oe-o," with something of a wail in it. I feel sure, however, there was no sadness that night amongst the Petrels. The island was like a fair, the eager arrivals running hither and thither inspecting, rejecting, visiting, courting, and chanting their subterranean lyrics. This ceaseless eagerness and feverish activity

reminded me of nothing so much as when whilst I have been angling, a sudden hatch of fly has occurred in which the males outnumber the females by a thousand to one.

Many of the Kuaka burrows were really alive with revelry, and must have entertained as many visitors as that house on the walls of Jericho, where for a night the spies lay hidden on the roof. All night long the Kuaka were streaming in and out of their holes, stealing over the surface like rats, and like rats, too, when alarmed, scuttling off in the half light along the ragged paths but never even when pressed, rising to fly.

There were a few birds doing a little scratching, but most of the holes entered and re-entered by Petrel were at this date untouched.

Often a Kuaka would sit for long periods just outside a burrow mouth, gazing, and I believe at intervals singing into its cavernous depths, and in this position the preoccupied little creatures could be touched and even gently stroked.

There were shallow hollows, too, outside the burrows, evidently made by the birds' movements in resting themselves and much less deep than dusting holes.

I noticed, too, that the Kuaka could flutter up very steep surfaces and that in doing so both wings and claws were used. The bole also of every tree growing at an incline was scratched and clawed and shewed plainly the marks of the clambering of active birds.

Although a few of the Kuaka, and a few of the Parara, Titi Waimui, and Mutton Birds, either alone or in couples holding the burrows, had already paired, the vast bulk were still courting and selecting holes for the coming season. In

Nest and Egg of Parara.

fact, many of the tunnels so freely entered overnight were in the morning found to be empty.

I turned in, and for long lay ruminating over the marvels of that evening flight, and listening to the night so crammed with sound. At last, with the wail of innumerable Petrels in my ears, I fell asleep to wake again at earliest dawn, as passengers instantly wake when during a long sea trip the engines cease to throb. Something had stopped, it was the sound of silence again returned that had roused me. The growing light had drawn the Petrels down their flapped and wing-beaten paths; to the very edge of the cliffs had flowed their fluttering streams, runnels like those, that never to reach the earth spill themselves from the mountain heights of our southern Sounds. The dawn had called like God; at its bidding each tenant had stepped from his dark tomb. It was the morning of the Resurrection. No wood birds sang, a silence had fallen on the earth blank as that of an extinguished star. In the chill of morn and after the night of eager courtship a desolation brooded over the empty land, as when the Lord shall have called all living creatures to their last account, when wealth of leaf in spring and weight of autumn grain shall be no more known to the generations of man.

Late next evening Leask reappeared with dismal tidings of weather prognostications and strongly advised us to leave the island. We steamed off therefore, about half an hour earlier than the beginning of the Petrel inflight.

I was glad we had done so, for we saw another phase of their life at this season of the year. In our homeward journey we passed for miles

through fleets of Kuaka heading towards the island. As the light failed they could be dimly seen gathering in scores of thousands from west and north and south. From what distance and for how long, I wonder, had they come, and with what stock of patience had they endured the slowly fading southern twilight.

By our watches we knew that at any moment their companies might take wing, but when the time arrived there was nothing dramatic in the rise of the birds; rather it seemed that party got up after party, and just before black darkness blotted out the sea, its expanse was to the limit of vision covered with innumerable flights of the little birds trailing low to the water and about to revisit their island trysts.

Chapter IV.

FOVEAUX STRAIT.

THE nights of October 23rd and 24th were spent on another Mutton Bird island, or rather islet, for Piko-ma-maku-iti cannot be more than a few acres in extent. It lies nearly midway between Stewart Island and the Bluff; and had been chosen partly on account of our desire to learn more of the nesting habits of the Mutton Bird, and partly because we hoped that on a speck of land so fully in the open sea some species of Petrel as yet unknown to us, might breed.

Owing to the nature of the coast-line with its apron of reef and rock our gear had to be landed at some distance from the hut we meant to occupy. Several portages were required to get it under cover, and no sooner had it been stowed than rain set in very determinedly, and again most of our goods and chattels had to be moved on account of the drip inside the hut.

Firewood was then gathered and the place swept out with an improvised broom, and during this operation in the straw of the single bunk much evidence of rat traffic was observable. Of one of these brutes—a rat of the black

species—we obtained a glimpse, and no sight could have been more unwelcome. Rats anywhere in numbers, but more especially on an island, spell destruction to the smaller and tamer birds and to the eggs of every species not carefully covered. Neither, however, the haunting thoughts of these vermin nor the unending rain could spoil a first day on an island unexplored. The tree growth of Piko-mamaku-iti we found to be less rank than that of the other islands and islets visited, the Ferox nettle less widespread and the ground vegetation almost entirely Stilbocarp. All the paths were blocked with its immense vegetable marrow-like leaves from amongst which arose tall handsome flower spikes, the purple inflorescence of which was just beginning to show.

As had been anticipated after discovery of rats, birds both in numbers and species were scarce. Of land birds, only Pigeon, Tui, Bell-bird, Parrakeet, Tit, and Fern Bird were to be found; the last-named very scarce, one pair noticed but once, as they flew through the open bush high above the ground.

Robins were neither heard nor seen, and indeed were not on the island. The Petrel tribe had also suffered from the rats, for broken remnants of egg shell were plentiful about the burrow mouths; but we got Kuaka, Parara, Titi Wainui, and Mutton Bird.

About our landing-place and not far from the hut were several pair of Sea Hawk. The nest of one of these pairs I found in sparse wiry turf amongst the rocks, shaped smooth, close pressed, and ready for eggs. The anger and anxiety displayed by this Skua were surprising, for most

Parara Chick.

species leave empty nests to chance. I was amazed, too, at the toleration displayed by the birds towards other members of the breed, haunting their neighbourhood.

One of the pleasures of an acquaintance with birds is certainly the complete originality in the habits and character of every species.

The Sea Hawk devours immature Parara, Titi Wainui, and full-grown Kuaka, and maybe the supply is felt to be so great that there is no more occasion for strife over meat, than amongst dogs for strife over water. The ocean tracts, furthermore, may be considered too vast to parcel into lots. There is room for all—enough and to spare. I suspect, moreover, that Skuas sometimes combine in chase, and may have—nay, must have—enough of virtue to share in some degree the common bag, and for these reasons the bird may have learned toleration of his fellows.

Harriers, congregated in twos and threes, I have often watched hunting Pukeko during the winter months; and the advantages of the game were so obvious that I suppose only the knowledge of each Harrier that all other Harriers are utterly rogues, selfish and untrustworthy, has kept the chance of an hour from developing, as in the case of the more moral Sea Hawk, into custom.

This, our first day on Piko-mamaku-iti, was one of incessant rain, and made the examination of Petrel nests really a deplorable business. Most of the larger holes had evidently not been touched for months. Their mouths were blocked with heaped leaves and debris of dead

stuff, and a green slime was everywhere spread on the ground.

Only a very small percentage of these bigger burrows had been scraped out, and even these were usually vacant. In one we got a brace of Mutton Birds, and in it there was no sign of a nest. Two burrows contained each a solitary Mutton Bird, and in each of these two birds' breeding chambers there was a well-constructed nest of twig and leaf.

About seven in the evening the Mutton Birds began to arrive, and continued to come in for about half an hour. The numbers of their in-flight were as nothing in comparison with the fall of Kuaka at Herekopere; nor did the big Petrels appear to be wholly in earnest. That night it seemed to me that only a proportion of the birds hawking and skimming over the islands touched land at all.

The manœuvres of one particular Mutton Bird we could closely follow. His burrow was a few feet from the wharé door, and in the dim light cast by our fire of wet wood, still further damped by the stream of rain that flowed down the iron chimney, he could be watched in comfort. There, at intervals he laboured, scraping violently and throwing the excavated dirt high enough to be lodged on the tops of the tall leaves of the dripping Stilbocarp. There next morning we found the gritty peat, the freshly-worked hole, but not the worker himself.

A second day's exploration of the island confirmed the impression that the Mutton Birds were not yet breeding in bulk; perhaps, owing

Cut-leaf Bracken.

to the utterly saturated condition of the peat, could not do so.

The proportion of holes shewing signs of use was far short of even half the numbers of birds seen on the wing. The immense majority of the tunnel entrances were slimy and leaf-blocked. On the other hand it was impossible to mistake the holes in use, the peat scraped out and lying everywhere on the Stilbocarp leaves.

Our second evening was spent on a level of peat thickly bored with holes, nearly bare of trees, and high on the island. There or thereabouts accordingly we ensconsed ourselves, far apart enough at any rate for me to know that I could not be disturbed. There is no greater offence than even in the far distance to hear a comrade sneeze and to know that the whole forest is alert and suspicious. The very stillest of mates should, when space allows, never be less than half a mile distant, but in any case a corpse is as a companion preferable to a man.

Even clad in sweater, coat, and waterproof the waiting seemed cold and long, for the Mutton Birds did not appear until forty minutes later than on the previous evening. We were fortunate, however, in getting not only a dry night but one, in addition, bright and clear.

Many, I believe most, of the incoming birds alighted on the cliff edges; for, sitting dead still, I could hear the faintest sound, and often the first indication of a bird's approach was the faint distant crackle of some small stick or twig, a sound exactly similar to that which affected so curiously the nestling Tits on Ulva.

Then, later, the bird would pass me, softly

stirring the loose dead leaves, shuffling over the peat and proceeding to clean out his hole or, if so disposed, to chant and howl. Others, few in number comparatively, arrived by a more direct method, dropping through the trees with just the sound of a heavy pear loosening itself on a warm night from a high branch,—dropping, too, with wings folded plump on to the ground.

This surprising fall, judging by sound, not broken in any degree by the use of the wings, and from a height of ten or fifteen feet perhaps, could not but suggest the thought that these Mutton Bird islands must have originally borne a very different vegetation, and that when the forebears of the present-day Petrels alighted they must have pitched from but a foot or two into thick grasses and ferns.

Probably in ages past all Petrels thus reached their burrows. Now, it is only the dropping birds who follow the ancestral custom, the others, owing to a change in the vegetation, having gradually acquired the habit of alighting on the nearest cleared space,—usually on the cliff edge, and thence running to the nest.

On the wing no bird uttered a sound; but I believe, though it was too dark to be positively certain, that upon arrival at a burrow the Mutton Bird often took up a position similar to that of the Kuaka, noticed on Herekopere, gazing into the darkness of the burrow mouth, and howling and whining in unmelodious ecstasy.

With the first approach of the evening influx the call "Too-woo-woo," repeated again and again, began to be poured forth from each hole

Ti-ti-Waimui in burrow.

occupied. Its repetition was endless, but not monotonous; and the long whine rose and fell as the bird's lungs permitted and as its excitement waxed and waned.

The birds sitting or in occupation were in turn answered by those just arrived, "Too-woo-woo," the last syllable drawn out into a long howl; then "Too-woo-eeh," rising in its terminal syllable to the screech of a caterwauling cat. Then came the great effort of all, "Too-woo-oo-oo-o," expressive of I know not what agony of love and longing, and with the additional "oo-oo-o" drawn out as a dog nodding to the moon extends his long howl.

This "Too-woo-oo-ing" was kept up for hours, each serenading Petrel repeating his performance at short intervals.

Never have I heard such extraordinary singing of birds; and ten times worse weather would not have been too high a price to pay for that evening's entertainment.

Chapter V.

SECOND CAMP ON HEREKOPERE.

WE reached Herekopere for our last and longest visit on November 23rd. Besides our desire to discover more of the habits of the Mutton Bird, we hoped also to get nests of the Sea Hawk, Robin, and Bush Creeper. The last-named species we knew was no longer in flock,—in fact, a few days earlier on another island, I had noticed one of them carrying in its beak material for a nest.

Upon this other island, by-the-by, we had intended to pitch camp, and orders had been given for the erection of tents and the collection of dry firewood. Owing, however, to heavy weather, Leask had been unable even to effect a landing; and the plan, very greatly to my regret, fell through.

On the 23rd, then, we landed without mishap at Herekopere, and, directly our impedimenta had been carried out of the vessel, I started with high hopes again to explore.

It was not altogether a fortunate day; for though I got a couple of Robin's nests one was in a position hopeless for photography or observation. A Bell-bird's nest with eggs was also inaccessible. Two pairs of Sea Hawk had

Nest and Egg of Ti-ti-Wainui.

hatched their eggs. None of the many pairs of Black-backed Gulls seemed to be sitting hard on their brown eggs. Lastly, a nest which I believed to be that of a Bush Creeper was only begun, and could not be completed for eggs during the six days we had allowed ourselves on the island.

On the other hand, I had never before seen the South Island Robin sitting, never before found the Bell-bird on its nest, and the young of the Sea Hawk were also new to me.

These Sea Hawk chicks were easily found, for the parent birds, already described in October as uneasy at my approach to certain localities, were now, in November, furious, and their swooping and cries exactly indicated the whereabouts of their respective broods.

One lot of two were five or six days old and clad in grey down; the other consisted of a single bird with growing quills, and in bigness about the size of a bantam. None of these chicks seemed to have any fear whilst being handled, and submitted without movement to touch.

The young of the Sea Hawk probably almost at once leave the depression on the ground which serves for a nest. In its grizzly neighbourhood, however, and in close proximity to the torn-off wings and half-eaten carcases of Kuaka, Titi Wainui, and Parara, they stop until able to fly.

Even in the extremity of rage the cry of the Sea Hawk is thin and weak, ludicrously inadequate apparently to its feelings, and ludicrously disproportionate certainly to its size. If, in fact, perfectly furious birds stooping and swooping at an intruder, ever roared gently as sucking doves it was these Sea Hawk.

Sea Hen, Skua, and Sea Hawk are other island names for this great gull, the first quite well describing its appearance when seen in attitudes of repose on sand or rock. The last designation is apt, too, for the nature of the bird is predatory and fierce, and, furthermore, at least one of his aerial positions most hawk-like.

The excitement of a Sea Hawk once aroused is not immediately allayed by the retirement of the intruder. I have bored my way—a lengthy process always—through the centre belt of bush and nettle to reach the other coast of the island, and yet have seen upon emerging into open ground, the still vexed birds sweeping in long beats to and fro above their grey nestlings crouching in the gale.

Thus separated by the island's width I have watched the Sea Hawk poised for long like a Windhover in the air, its fully-extended legs straightened beneath it, as are momentarily a Harrier's when voiding its excrement.

Although the Sea Hawk will pounce and swoop in a really terrifying manner, neither sex will, as will the female of the New Zealand Falcon, stand on guard over the nestlings and seem to consent to share their fate; nor will either bird dare, in my experience, actually to strike.

I had much wanted to study the Sea Hawk at close quarters, but on account of the parent gulls' disinclination to approach their chicks, nothing could be done in the time available.

During this November visit to Herekopere—a favourite Mutton Bird resort be it remembered—the inflight of that species lasted rarely more than about thirty minutes. Nor could there, I think, have been more than a few

Skua's Egg on bed of Sedum-Kane-te-toe.

thousand birds of this breed visiting the island, at any rate there never seemed to be in the sky at one period, more than a few score.

The vast numbers we had been led to expect were disappointingly absent. The influx, too, of such birds as did appear varied in numbers from night to night. Each evening, too, the hours of arrival differed, on one occasion none arriving until half-past eight.

Our experience of the spring and early summer of 1911 on the Mutton Bird islands made easily credible what I afterwards heard,—that the birding season of 1912 was the worst ever known in the trade. The majority of burrows in fact were too wet to be used.

The Mutton Bird digs deeper than any of the other Petrels to be found in these parts, and often the termination of his tunnel was soft bog or even sometimes a shallow pool of foul, stagnant water.

The paucity of occupied burrows may have, in part, accounted for our inability to discover a sitting bird, or the deplorable weather may have postponed the nesting operations of the entire breed. We failed, at any rate, to obtain an egg, although in one bird handled the unlaid egg could be felt ready within a day or two for obtrusion.

At this date the caterwauling so noticeable on Piko-mamaku-iti a month previous had, except in a few instances, ceased. Probably, therefore, such birds as intended to nest had selected partners.

The Kuaka came in from the ocean later than during October, and not as before in such vast numbers for so brief a period of time. In all

burrows occupied by this breed eggs much incubated were now to be had. Many, but not all, of the Titi Wainui were sitting on an egg. The young of the Parara were by this time seven or eight weeks old—large, heavy, and densely covered with down.

The roof and walls of the chamber of one particular Parara chick photographed by us were quite grey with the scurf of the down and sprouting feathers. The nestling big enough to show fight possessed a bill sufficiently strong to administer a severe pinch.

At night every bird on the island seemed to be wailing and calling, but the burrow sounds were almost impossible to locate and harder still to apportion, for the more densely-settled districts were tunnelled like the foundations of a great city, and different breeding chambers had often, I am convinced, a common entrance.

By ten o'clock a roar went up from the island —the blended chorus of an enormous multitude of birds, a bleating, crying, humming wail of four species conjoined and so overfilling the air with sound that, as before, I woke with the peace of dawn.

To recapitulate,—the Parara is the earliest breeding Petrel to be found about the northern portion of Stewart Island, and his nesting season is spread over many weeks; then comes, with a season also extending over many weeks, the Titi Wainui. The Kuaka lays its two eggs about mid-October, and I believe its breeding season is much more restricted in time. The Mutton Bird is the last of the Petrels mentioned in this book to lay in bulk. I have, however, no doubt but that the few dozen individuals of this

Skua Nestlings, Herekopere.

breed noticed on September 2nd to be flying over Herekopere were about to select nests, to hold them, or to lay; and eggs not much incubated have been obtained by me as late as the end of February.

I should say, therefore, that far from the egg of each Mutton Bird being laid on November 25th, either on land or water, that eggs are obtainable during the months of November, December, January, and February, probably also earlier and probably later.

Chapter VI.

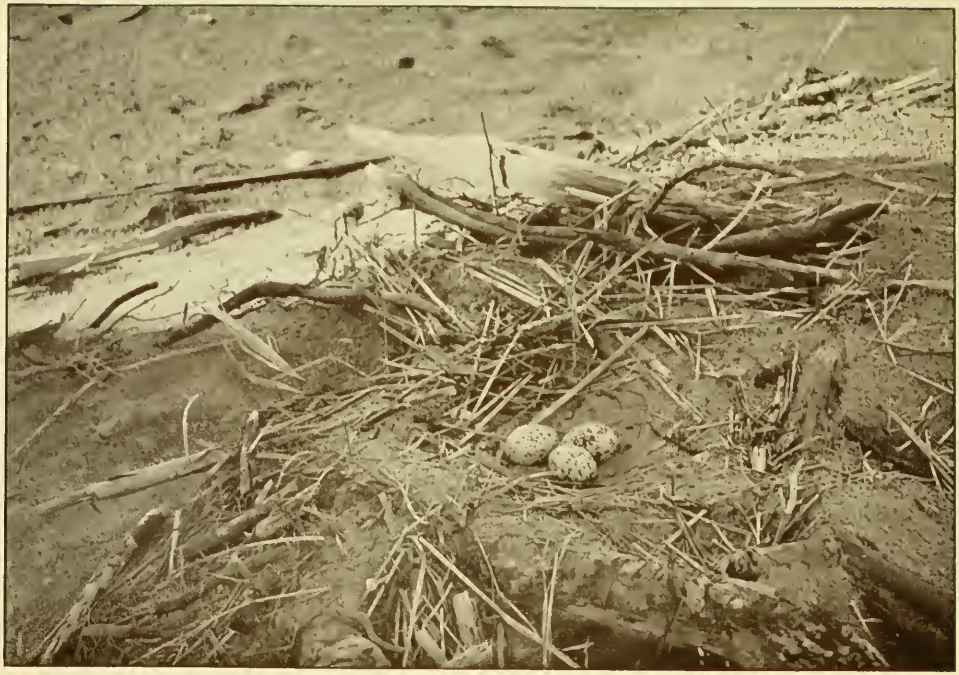
THE BLACK-BACKED GULL.

ON the rocks at the base of the red cliffs of Herekopere many Gulls were breeding during the last week of November. Skuas possessed the northern heights, Gulls the western shore, and each was careful in the matter of trespass, the Skuas keeping away from the west and the Gulls avoiding the north end of the island.

Throughout the southern part of New Zealand, on open river beds, almost from source to sea, this Gull is plentiful. In the North Island, he frequents estuaries, lagoons, and coasts, is to be seen at all the shipping ports, and, indeed should be known even to the most unobservant.

I have got his nest on tidal drift, on edges of cliffs and promontories, on bare rock; and have seen the eggs placed on drift sand without even a vestige of nesting material. This last clutch of eggs, however, was probably laid after an accident to an earlier lot.

On the naked Porangahau beach, where my earliest attentions had been paid to this Gull, I had found him wary and deeply suspicious. On Herekopere he was as shy; but here it was



Nest and Eggs of Black-backed Gull.

possible to select nests within suitable distance of rock and scrub, where by the addition of piled sticks and fallen brushwood a screen or blind could be made to blend into the adjacent scenery.

The first nest attempted, some fifty yards from the hut, was selected on account of its proximity to our headquarters, and because I had hoped that its owners would have become careless of our presence. Composed of seaweed, grass roots, and shredded drift it was based on the giant pebbles of the beach and safe from all but the most unusual seas, for birds, like men who build on banks of rivers liable to flood, beneath cliffs, and in volcanic areas, will deliberately take certain risks. Seas had formerly reached the site of this nest the birds well knew; they were prepared to chance it again doing so in their time. In the nest were three eggs, two lying on their sides, and a third standing on its end and the top only showing, so deeply was it embedded. This egg, which I think must have belonged to an earlier nest robbed from another pair of Gulls and built over, was exhumed, and as the later tenants accepted it without demur, it was thought that a screen might be safely ventured. Within its shelter for many hours I waited; but the pair were not eager to sit; and although they returned shortly after my companion had gone, it was to watch for what the tide would bring up.

Upon a convenient rock the birds stood, and at long intervals pounced upon stuff brought in by the waves. Once the supply appeared to be something in the nature of a jelly fish, at another it looked like a dead bird. Each of the

Gulls thus in turn secured a scanty meal, and each in turn absolutely respected his mate's proprietary rights. A share was never asked for, no, nor even a hint of hunger overtly expressed,—a restraint and self-control the more remarkable from the evident desire of one of the pair for further food. I saw this bird standing within a foot or two of its gorging, guzzling companion and simulating the actions of the latter to the life, rending, dabbing, and shaking.

In at least one species of bird known to me excitement of the amatory feeling through the imagination will cause an exact reproduction of many of the actions proper to performance, but before I had witnessed the ecstasy of this Black-backed Gull I had believed that only the master passion could have afforded such a manifestation.

A Gull never places his feet on his capture; it is torn, and dabbed, and shaken to pieces, and always after feeding the bird scrupulously washes himself.

Stranded whales, and black fish, surf-beaten birds, dead fish, and drifting krang, all afford a meal; nor does the bird always confine himself to carrion. On one occasion I saw a Black-backed Gull attack a weakly Petrel which, after a short flight from the island, had alighted on the ocean. There it was immediately seized upon by a Gull who at first attempted to fly off with his prize, but later dropped the unfortunate bird into the sea where it was worried to death.

The sight of the Black-backed Gull is remarkably keen; and whilst in the screen my least movement, however protracted, caused instant

Chicks of Black-backed Gull.

LAKE WAKATIPU.

To face page 47.

alarm; on the other hand the rush of the shutter released passed unheeded.

These Gulls perhaps trust so much to sight that other senses may have grown less keen, or upon them less reliance may be placed.

The owners of the first nest under observation, never very happy over their choice of site, finally deserted, after giving me a single chance with the camera.

My second hiding hole, a sort of rocky dungeon roofed with bull kelp, was an excellent and comfortable construction. With legs extended and at ease I had a magnificent view along the base of the red cliffs, and could see in the distance after the alarm of my presence had subsided, Gull after Gull return to its nest.

The pure whites of a sitting bird make it very conspicuous, and from our launch far out at sea each incubating Gull appeared a dazzling speck.

Upon my disappearance into the bowels of the earth those birds with nests most distant from the camera at once returned to their duty, and this confidence spread gradually down the shore-line until but one pair—that couple most near to me—remained in doubt. They for long stood together on a rock just awash in deep water. Then still together they moved forward, then one alone approached in several short flights until within fifteen or twenty yards. At last, so silently that I was unconscious of it, the female took her place on the eggs.

It is always during these last minutes that the watcher's anxiety culminates; and no lover looks more eagerly for his mistress's approach than the enthusiast for his bird. It is impossible to stir or call, and inquietude as to past conduct,

which before taking to the photography of birds seemed unlikely to trouble or annoy until the Judgment Day, now harasses the mind. I find myself constantly considering my past.

What piece of idiotic folly have I just committed? Was that branch moved at the last moment really properly replaced? Might not the screen of fern fronds have been brushed aside as I crept in? Am I perfectly certain that the waterproof thrown down near the nest was ever picked up again? Even unlikely things throng the mind. A cruel fear that constantly besets me is lest McLean in retiring—the veriest trifle will keep a bird away—should have carelessly broken his neck within view of the nest.

These are the troubles that are aging me prematurely. The public has resolutely forborne to read my verse; my stock has perished wholesale; my banker has on occasion written me letters such as no gentleman should address to another. But these miseries are as nothing to those borne with the knowledge that repentance comes too late, that atonement is impossible, that punishment must follow instantly.

This feeling, however, that my actions in the field, must, so to speak, be paid for cash down, is having the happiest effect on my general character. It is making a good man of me at last. But, if the pains are severe so are the pleasures of this pastime correspondingly sweet. The woodlands become full of a new mystery. The knowledge grows that utterly wild creatures are peering and inspecting with craned necks and cautious tread, thrusting the fronds apart that screen their tracks, pushing through curtains of greenery that, as the birds pass, brush

Black-backed Gull on Eggs.

over plumage of neck and back, and delicately close.

The heart thrills as approach becomes more near, and twittering talk and reviving song tell of confidence restored. An eclipse of light darkens the coming hole; the arriving bird has passed athwart the sun. Leaf shadows dance in the quiet of noon-day calm. It is where for an instant the bird has perched and the weighted twigs leap to readjust themselves. Grasses bend, sere rushes rustle; and in the wet forest grey with stretching drops, a sudden patter in one place alone, betrays. In calm weather, fine, or with gently falling rain, the faintest stir is filled with high imaginings. At last the shy inhabitant of the wilds stands almost within grasp, unconscious of espial, as Dryad naked for the bath, perfect in pose as poet has imagined nymph.

Chapter VII.

THE SOUTH ISLAND ROBIN.

HOW comes it that these Robins are so extremely tame? How comes it that they prefer to build by the residences of man? If we can build a perfect structure from a single bone, inferences may be drawn too from the surviving traits of faith and trust; they, too, are facts.

We know the toothed birds of earliest fossil finds to have been half reptilian in form, and that, though differentiated on divergent lines, reptiles and birds are relatives still in no remote degree. If to this day in certain alien breeds reptilian traits survive, if some birds live yet who bury their eggs as turtles do in sand and trust their incubation to the sun or to the heat of decomposing vegetation, then traits of trust in man may have descended too.

Sometimes I like to dream—'tis but a vain imagining—that the exceeding trustfulness of the Robin may have been evolved during some long gone golden age when mankind really loved his birds.

I like to dream that to some ancient race the Robin may have been a temple bird, secure in the precincts of the quiet courts, eyed with austere

Male Robin.

concern by holy men, fed on high festivals by children's hands, sacred throughout the land.

I like to fancy that though himself, his speech, his faith, his land, except perhaps some peak—an Easter Island in deep seas—has gone, yet that not all has gone, but that whilst still the Robin lives, the kindly customs of that lost race survive.

In the eighties I remember the Robin fairly plentiful in the wooded gorges of parts of Canterbury, and at that date he was probably still comparatively plentiful in suitable localities throughout the South Island; but it was not until thirty years later that a more intimate acquaintance with the breed began.

The South Island Robin is about the size of a fledgling thrush, very dark brown all over except the lower breast and belly, which are more or less grey-white. Above the upper part of the bill there is also a minute line of white. This grey, or grey-white ventral tract varies much in different birds, and is in some quite irregular. The belly feathers, moreover, do not always lie close and tight, and this sometimes gives the bird a rather shabby and unkempt appearance as if its plumage was sparse and uneven. Usually, however, the bird wears that particularly neat appearance so associated with the English red-breast, and the plumage of the finest males is almost black and of splendid sheen.

Even in Stewart Island the bird has gone from about the little settlement of Half Moon Bay. Wherever a man builds even the smallest hut and wherever the Weka is killed out rats follow, and the Robin is at once exterminated. Some of the great inland valleys, however, are

still full of Wekas, and there I found the Robins fairly plentiful before, after, and during the breeding season.

In lesser numbers they are to be found high on the uplands, and indeed are probably moderately plentiful in all the wetter, wilder, and uninhabited portions of Stewart Island.

It is on the islets that lie off Stewart Island that the species should longest survive and perpetuate its race; and there, indeed, with a little care and a little inspection the Robin should continue to live. Even on them, however, he is not perfectly safe. On many of these islets rats already swarm, either having long ago swum from wrecks or more recently been by chance introduced from boats landing stores for the Mutton Bird season. In fact, each visit to an islet, of any craft bigger than a boat, carries possible death to the Robin. Rats venture everywhere and intrude by every means; any bait, for instance, left on board a fishing boat is taken by these brutes who at night board by the mooring ropes. It is easy, therefore, to suppose that rats might be inadvertently landed, and that when once established on one island they might reach another and thus spread over whole groups. No body, even of rats, would attempt to negotiate six or eight miles of open sea, yet the few hundred yards that separate some of these islands would hardly deter them. On the other hand the Robin may be successfully acclimatised.

I am told that birds liberated on Ulva increased, until, upon the death of the experimenter, cats were again permitted on the island. These Robins built about the out-houses and

Pair of Robins Female sitting.

Female Robin.

sheds, selecting just such sites as the English Red-breast might have chosen.

There is always, I think, a special interest in noting any little differences in the life habits of the very closely allied species such as, for instance, the Robin of the South Island and the Robin of the North Island. In manner of flight, momentary rigidity, and gymnast's manner of holding himself braced at right angles to a vertical stem, the general resemblance is great.

It is in their singing that the birds chiefly vary, the bird of the North by far eclipsing in this respect his southern relative. The North Island bird on an evening fine after rain, I have heard sing high on a tapering white pine, for half an hour at a stretch, and have been entranced at the variety of the long-continued outpouring of song with its notes of Canary, English Thrush, and English Robin.

Often my wife and I would ride to the little valley where these fast-disappearing birds then still survived, just to listen to the evening singing; there is no song comparable to it in the whole of New Zealand bush, yet even in dull print its beauties are hardly known; even in books justice has hardly been done, and it has been strangely passed over by early writers, to whom the bird must have been well known.

The song of the South Island Robin, though it also possesses a note somewhat recalling that of the English Thrush, is not remarkable.

In January, 1911, I got my first South Island Robin's nest. It rested on one of the wall-plates of a hut in Herekopere Island, and directly I broke the dry flax by which the door was secured

an agitated hen Robin greeted me with a loud series of alarm notes. There was a full-feathered nestling in the room who declined to leave by the great open chimney used by the parent birds as their route of entrance and exit. In the nest lay one addled egg.

On the third week in November I got another Robin's nest. It was built just beneath the roof of the narrow lean-to of this same hut, and contained five eggs. We saw much of our little house-mates; and I was especially interested in the hen's manner of incubation, for sometimes she would warm her five eggs and sometimes she would allow them to become stone cold. Her nest was above the door and, as we passed many times each day directly beneath her, and within a few feet of the eggs, very soon she paid us the compliment of disregard.

Her habits were in no way affected by our presence in the island, yet sometimes she would appear to be sitting hard and other times the eggs would be, as I have said, quite cold.

This alternate raising and lowering of the temperature of the eggs continued for four or five days after the full clutch had been laid. During these days once I know the eggs were deserted for several hours, and on another occasion the hen was off as late as eight o'clock in the evening, and only returned, I judged, after several sharp calls from the cock, who never left the vicinity I believe. Later the hen began to sit very close, and no doubt after our departure safely reared her brood.

I suppose each species has its own method, but although eggs—the well-incubated eggs—of many species are left for considerable periods

South Island Robin on nest.

I had not previously experienced a case where the cooling process—if it were such—began so early and was carried to such an extreme degree.

A second nest, also got during the third week of November, I found to contain three squab young. In deep shade contiguous to the nest a Morepork was sitting, and his baneful presence so near the chicks was occasioning in the cock bird loud series of alarm notes; by these cries of distress indeed it was that the nest was discovered to me.

I routed the little Owl out of his dark shelter and had the satisfaction of hearing him well mobbed by excited Tuis and Bell-birds and less animated Warblers and Tits.

His enemy gone, the Robin at once proceeded with his work and, satisfied by my conduct that I must be a friend, took me into his confidence by a direct flight on to his nest. It was built about nine feet from the ground in an immense bee swarm like hanging cluster of close packed dead bush vine twigs, tendrils, and curls, and in colour as perfect a match as could be to the Robin's own brown-black plumage.

During the erection of our stage neither of the parents evinced much alarm, and we managed to get the lens within a few feet of these tame little creatures. When advancing my scissors to remove a twig or two on the very edge of the nest, the hen at first attempted to lure me away, half falling and half fluttering off her nest as if disabled, and holding, as does the Tit, her wings aloft with the primary quills very widely spread apart. When returning, she saw I was not to be drawn off, this brave little hen fluttered almost into my face, even brushing

my hand with her tiny wings. Reassured and accustomed to my close company, she proved a most assiduous sitter, moving but two or three inches aside even when the male was present and feeding the chicks. There, on the very edge of the nest, she waited as if grudging an instant's absence from the beloved chicks. On the rare occasions when she did leave her family I noticed her on the peaty ground and low shrubs gathering insects and grubs. The smaller ones she ate herself, as conscientious folk eat only the smaller berries as a sort of perquisite when gathering fruit. When she was so fortunate, however, as to get a considerable caterpillar or bulky moth,—that was too good for herself she evidently thought; to have eaten it herself would have been simple waste—the discovery of such a tit-bit always terminated her brief jaunt. The little ones were never out of her thoughts. Like a kind elder sister at a Christmas tree, she wanted to return with something got by herself for the babies at home.

The sanitation of the nest was done chiefly or altogether by the male and the droppings deposited at command on the edge of the nest by the young birds, swallowed.

During our whole stay at Herekopere there was but one morning of calm weather, and it was during this lull that we were fortunate enough to secure our photographs.

I often visited this nest, and the day previous to our departure found the chicks with wing quills already well developed and within five or six days of flight. Their growth is therefore very rapid. The Morepork was once more within three or four yards of the nest, and not

South Island Robin on Nest.

for the first time, the possibility of him, too, possessing a home in that dark mass of creeper, entered my mind. There was no timber, however, for the construction of a ladder even of the rudest sort, and investigation was impossible without the wrecking of the Robin's nest. If, indeed, the Owl had also built in this dark mass of dead stuff, a few feet only could have separated the two establishments. It goes without saying that the Owl knew of the Robin's nest and chicks,—that admits of no doubt whatever—but why he should have abstained from hunting the parent birds so that even if not captured they would have been forced to desert the neighbourhood and allow their brood to perish, and why he should not have taken the helpless chicks is less easy to decide.

In another volume I have given reasons for believing that propinquity establishes some sort of bond even between unfriends, and between the oppressor and the members of the tribe upon whom he preys, and have given examples in the conduct of the Falcon who, I believe, hunts at a distance from his eyrie, and in that of the collie who prefers to worry sheep from flocks strange to him.

Chapter VIII.

THE YELLOW-EYED PENGUIN.

CERTAINLY two species,—the Yellow-eyed and the Blue Penguin, locally known as the Rock Hopper, breed on Stewart Island, and I believe near Pegasus there is also one colony of the Tufted Penguin. This last bird, again and again I was told, nested in many parts on the north and east of the island; but the rookeries always proved upon examination to be those of the Yellow-eyed bird. My acquaintance, in fact, with the Tufted Penguin is of the briefest, and the individual bird found by me in Chew Tobacco Bay was no doubt a straggler from further south preparing to moult. He was standing in the shade of a high rock face and near a little waterfall just above high-water mark, and viewed our approach with nonchalance.

Probably at a later period this bird would have been found retired many hundred yards into the woods with his shed feathers lying thick about him. "Shedding" is perhaps hardly the word, for the old plumage seems rather to come off in patches and pinches and peelings and flakes; and I have seen a bird felting off its old coat just as a sick sheep casts its wool.

Yellow Eyed Penguin disturbed.

Tufted Penguin, probably about to moult.

Many species can only afford to lose their feathers, and especially their larger feathers, gradually and systematically in pairs, and of the many differences between the Penguin and other birds none is more marked perhaps than the manner of his moult. His vast accumulation of fat enables him to endure for long a comfortable starvation embowered in greenery.

The Yellow-eyed Penguin and the small Blue Penguin are both very plentiful about the north end of Stewart Island, the former, the more pelagic bird, preferring the open sea and placing its rookeries on islands or on the edges of the main island's outer shores. Almost any dry slope or knoll in the forest makes a suitable nesting site; it is the landing place which has to be chiefly considered, and parts of the beach are selected, where the birds coming up from the sea can enter straight into the bush, and avoid the stretches of soft sand and shingle, particularly irksome to a bird whose method of progression is by hopping. Inland and away from the clean beaches the Penguin paths are very slimy and slippery and smooth with the traffic of the heavy birds. The smaller undergrowth is completely trodden out, and the air always permeated with an oily odour. When a meeting between the two takes place usually the birds give place to the larger animal, man; but on one occasion, whilst descending a very steep path, worn by bird use and rain into a deep rut, we met a couple of Yellow-eyed birds half way up. One of them, after very long consideration, sloped off by easy stages to the sea. The other who had not yet completed his moult, and upon whom were still many patches of unshed felt,

refused to budge, and not placated with squeezing us on to the wet and dirty bank, made furious lunges with his beak, when accidentally brushed by our gear or waterproofs.

To and from their rookeries the birds travel in broad daylight, and often one can be seen slouching home from the ocean, ludicrously like a man drenched to a sop, with his soaked arms dropped at full length dejectedly at his sides, and as helpless looking as the legs of a drone on the wing.

The main entrance to one of the Te Kuri rookeries was up a little creek, shallow in ebb and filled in a flowing tide. Breaking its bed was a fall of three or four feet, and once, when my head was momentarily turned, a Penguin appeared on the upper level. He must have leaped straight from the water beneath, as Shackleton describes the landing of an Emperor in his "In the Heart of the Antarctic." Noticing me on the track this bird returned to the sea, and cruised about the little estuary swimming high out of the water somewhat in the manner of a Pekin Duck. Sometimes, too, this species of Penguin may be observed moving very low in the water and with his head alone showing. When companies are swimming fast at sea they can be easily mistaken for some sort of porpoise, possessing the same wonderful resilient leap and dive, in and out motion. Like flying fish, they live indeed a two-fold life; as birds enjoying the air, and warmth, and light, and as fish the penetrable waves, their coolness, and their dim delightful shade.

The breeding season begins about September.

Yellow Eyed Penguin on nest.

Nest of Yellow Eyed Penguin.

On the 22nd of that month we visited an island rookery; for, although the birds do not sit in very close quarters to one another, or congregate in very huge numbers, still their nesting sites deserve that appellation. At this early date there were only a few birds to be seen. One of them had evidently been collecting nest material, for its bill was soiled with peat and earth. Another was sitting on an empty but fully completed nest, and a third bird was covering a single egg. Its egg must have been newly laid—it was still clean and fresh-looking, oval, and in size similar to a turkey's egg. The carelessly constructed nest, composed of small twigs and sticks and lined with leaves and bits of fern frond, was sheltered by an ironwood's recumbent bole. The owner of this fresh egg when very nearly approached, sloped off—that is the proper word, and no slang—with the awkward shambling gait of the species. The departure was by short low hops, and ever and anon the bird glanced over its shoulder as if fearful to be taken unawares, and unfairly, by a sudden rush, like a child inviting pursuit, but bargaining as he still flies for a fair start. The pace of this disturbed Penguin, at first slow, had in it some semblance of decorum, but with every fresh slip and stumble over supple-jack and vine she became more and more flurried and fussed, until, utterly losing her head, the orderly retreat became a shameful rout. Broody birds when disturbed merely rise and stand upright; then, if let alone, subside again on to the eggs with a motion so slow as to be imperceptible. Sometimes also a slight hiss is emitted; and, if teased, the bird will raise the

scalp feathers and to an even lesser degree those of the body. I should imagine that with his bill the bird could inflict a severe wound; and, on one occasion, when struck over the knuckles by the flapper of a big nestling, I found the pain quite considerable. On the whole, however, this Penguin is of a pacific nature, and if sufficiently pressed easily leaves its eggs. It does not, however, go far, the tripping, stumbling undignified run on the loose leaves and sticks is soon heard to end. The fallings and sprawlings cease; and after a little, if silence be maintained, the bird may be seen staring and peering and listening to discover if once again the coast is clear.

In appearance the Yellow-eyed Penguin is a handsome fellow in his close-fitting coat of grey, his extensive waistcoat of white, and his elegantly-patterned bright pink feet.

Egg and newly-laid Egg of Blue Penguin.

Chapter IX.

THE BLUE PENGUIN.

THE Blue Penguin breeds very plentifully along the shores of the inlets of Stewart Island, and upon the small, wooded knolls, rocks, and islets that add so much to their beauty. On the outer islands the nests are less numerous, and generally speaking this small Penguin is most common on the more sheltered waters. In Paterson Inlet we were constantly steaming through or past their little communities, the birds usually swimming slowly and with hardly more than head above water. At the launch's near approach each bird would disappear by a nod of the head—for the diving movement was scarcely more—and a slightly deeper submersion of the body. The dive, in fact, was often so shallow that in calm weather the bird's direction could be distinctly traced by the heave of the widening water arrow-head that spread in in the little swimmer's wake.

The Blue Penguin begins to lay a week or fortnight later than his cousin of the Yellow-eye. At any rate, during the third week of September, no eggs were discovered although fresh burrows were found, sometimes unoccupied, sometimes containing a single bird, and once a pair of birds.

The nests are not open to daylight, but concealed in rocky crevices, caves, or—if in the bush—in burrows scraped out beneath rotting logs or amongst the knotted roots of living trees. These burrows are never deep, and vary in length from a couple of feet to four feet, and often a number are in the same locality, though by no means always close to one another. The nest is a fairly substantial structure, consisting of a base of large sticks and twigs, whilst above them lie a sufficiency of the thick, leathery, water-proof leaves of the mutton bird scrub. Two eggs, hen size, make up the clutch; and sometimes an egg, when quite fresh, is stained at the thicker end with a minute patch, diffused but distinct, of brightish green. This little blotch seems to be an integral part of the egg, and not an accidental extraneous marking. The eggs, which do not seem to be laid immediately after one another, become after a few days' incubation much discoloured with peat and dirt.

The vestibules of the burrows discovered had of course to be removed before the bird could be seen; but if they were carefully re-covered with sufficient fern tree fronds, desertion of the nest was rare; and several of these passages were thus twice unroofed without harm. The bird can then be seen in the dim light making a small occasional movement of the chin as if swallowing on a dry throat.

The Blue Penguin is most irascible when excited and disturbed in its burrow; and acts not only on the offensive but makes sorties of three or four feet from its eggs, and grasps with a ferocious grip the cap or hat guarding the digger's hands. The object thus seized is taken

Blue Penguin on nest.

into a sort of double chancery, the Penguin holding it in his beak whilst administering a furiously rapid beating with both flippers,—action realising in full degree my conception of what is termed in old-fashioned children's literature, "a sound flogging." Only have I seen equal rapidity of admonishment when, from a doorway in a crowded street, an over-worked mother of many seizes a small offender, pins him with one dexterous twist to her maternal gremium, in a fury spanks him standing, and rushes back to her over-boiling pot.

The action of the little Penguin displays just the same furious haste. It is thinking of its eggs and annoyed at the distraction, and really the performance so resembled a human smacking administered expeditiously that I seemed to hear the cry and see the wriggling escape of the victim and the rubbing of the afflicted part. The noise of these encounters and the furious snarling of the spit-fire Penguin was altogether too much for Banjo's equanimity. The field naturalist was lost in him. Dancing on his taut rope like an heraldic lion he roared his mingled feelings out, joy at the din of battle bray, and deep disgust at inability to help.

Chapter X.

THE WOODS OF AUTUMN AND SPRING.

TWICE during autumn I had been camped on the banks of the Rakiahua, once in search of high country grasses, and once again to watch a Kaka's nest; and now in spring again I was delighted to be in the well-remembered wilds to sleep in the bare hut, to wake to the view of the wooded slopes, to watch the spring awakening of dwarf plants on soaked red moss and spongy turf.

There are no pleasures like those the desert can give; and to their devotees the wildernesses of the earth can never weary or grow stale. I had left in autumn and now returning in spring found a vast difference in the life of the woods. In March, a stranger to the movements of our New Zealand birds would have wondered at their numbers; in October, he would have vowed that even here in these remotest wilds, native species had become almost extinct. The alteration, in truth, was very great. In March those inland woods had been full of sound and flight; in October they were noiseless and bare,—'bare deserted choirs where once the sweet birds sang.' The tall trees then had really been alive with Kaka, the birds hopping with short, silent

Umbrella Ferns

flights from bough to bough—the Kaka can be as silent as an Owl on the wing—raining down rotten wood and bark, clambering by beak alone, uttering everywhere their guttural "Clock," "clock," "clock," and listening with rapt inquisitive air, to the scratching and tapping sounds made by us, as we paused beneath them on the forest path. The woods were filled with their calls and screechings; and I may say, without exaggeration, that Parrots were there by the thousand. Pigeons, too, were very plentiful, and Tuis, and Bell-birds in lesser though still very great numbers. Fantails, though never so numerous as in the forests of the North—the insect harvest is, I suppose, more sparse in the chillier, southern bush—were yet relatively plentiful. Numbers of Warblers were on the tree tops very high from the ground, and Tits were to be noticed everywhere. Robins were then to be found along the very skirt of the forest where the tall pole manuka forms a neutral zone between the tangle fern and rushes of the valley lands, and the kamahi, pine and ironwood of the forest. Again in the higher forest fringe where the taller trees begin to dwarf, where new and mountain species begin to assert themselves, and where once more the tree manuka appears, the breed is to be found in autumn.

The Parrakeets seen were in the forest, and nowhere else. On the higher spurs of the hills and in the manuka above the bush line, parties of the inquisitive, chattering Bush Creeper were frequent. To the best of my recollection the Rifleman was fairly common; and again, to the best of my recollection, that diminutive bird was

then living at a considerable height on the forest spurs. Wekas were evenly distributed throughout the country side, and the Fern Bird very plentiful on the valleys. The footprints and borings of Kiwi were visible on the flats to the south of the river, and upwards to the very limits of the scrub, where the open moors began. I believe, however, the birds were most numerous high on the hills.

Now, in October, all was different; and one of those vertical movements so often noted by me on Tutira had here occurred on a great scale. The birds had deserted the ranges for the lower coast lands, the more migratory species moving to great distances, whilst the less restless breeds had merely dropped to lower levels and sought the valley lands. The Kakas, for instance, left in these upland woods, we might have counted on our fingers. As for the Pigeons, I may say that in the forest itself there were none, though one or two were at intervals to be noticed about the fringes of the bush.

Except for here and there a lingerer, the Tui and the Bell-bird had gone. The smaller species were also much reduced in numbers. Fantails had become rare birds in these spring woods, whilst only here and there had a pair of Tits remained. The few Warblers noticed were no longer on the tops of the tall trees nor in large numbers, but at their ordinary nesting site level, and few and far between.

Twice I climbed Table Hill, but failed to find the Robins that in autumn had been on the uppermost edges of the forest. These birds were now spread over the valley. The few Parrakeets visible were about the flat lands,

Rakiahua Valley—Ruggedy Range in distance.

flying in and out of the manuka spinnies and often to be seen gently scraping and raking the ground. Although still, as in autumn, noticeable on high altitudes, very many Bush Creepers were now to be met with on the forest's lower border, and even on the flats. The Rifleman was no longer chiefly on the higher lands, and the nest, of the birds photographed, cannot have been more than 50 feet above sea-level. Even the ubiquitous Wekas seemed to have concentrated themselves along the edges of the bush, and about the flats; and although at the hut itself, where, in the autumn there had been four or five, there were none, the breeding season would account for their absence from that particular spot. They were still, I believe, mostly rearing their families and keeping their chicks in seclusion.

There can be little doubt that the Kiwi had come down to breed in the lower lands; and lastly each of the several pairs of Orange Wattle Crows seen in springtime and early summer, were noticed within a few score feet of sea-level.

The Fern Bird alone seemed to have felt no desire to move. He was, as formerly, plentiful in the clumps of red tussock, along the margins of the deep half-choked peat burns and in the stunted thickets of box-leaved koromiko and grass tree; and it was this spring I discovered him to be very common in the stunted wind-blown manuka on the very edge of the open moors of the mountain tops.

There had occurred between March and September a sort of two-fold movement, local and general, the more stay-at-home species having merely moved downwards from the high bush country towards the valley, the flats, and the

foot hills. The breeds possessing a wider range had altogether shifted their quarters, migrating towards the coasts, the islands, and those more fertile districts, where the most abundant food supply was to be most easily secured. It was therefore doubly interesting for me, who had seen the birds during autumn in their uplands, again to have intimate acquaintance with them throughout the spring months, and about the coasts and islands whither they had journeyed for food.

The climate of Stewart Island, though wet, is very mild; on the low lands and near the sea frosts are unknown; and already in September many of the coprosmas were in bloom, and the fuchsia-blossom season at its height. On the islets off the east coast the lemon-leafed matipo was covered with flowers, and almost at sea-level I noted in Paterson Inlet more than one grass tree in blossom. In fact, the enormous coast line and consequent absence of cold, produce in Stewart Island an exceptionally early growth. The fuchsias were now at their best, and the nectar loving birds were taking full advantage of the flower crop. The coastal woods were thronged with birds; Tuis, Kakas, and Bell-birds especially, were there in full enjoyment of the nectar harvest. Perhaps the Tui may have arrived first; he had, at any rate, been resident long enough to have acquired, in his own opinion, certain proprietary rights in particular fuchsia bushes, and I judged him to be a freeholder by the way he battled for private property.

In these tree top encounters, the Kaka, the larger bird, handicapped by the multiplicity of the small, close fuchsia branchlets, and attacked from beneath, was usually routed and

Filmy Ferns.

driven off. From the blossoming ironwoods later in the season he was less easy to dislodge. It was entertaining to watch, how, on the cessation of these combats, the ruffled Tui at once returned to his mate. Preening his feathers in her company, I always felt sure he was courting acclaim, bragging of his prowess, and boasting of the bellyers he had got in from beneath.

Besides these larger birds, Fantails, Warblers, and Tits were in great profusion. Pigeons were also plentiful; but I think the bulk of their numbers, and, quite possibly, a large proportion of the Kaka too, may have made an even more extended flight, and have temporarily left Stewart Island for the mainland.

In view of these great bird movements—I have noticed them on Tutira amongst ground birds too—it is difficult indeed to arrive at conclusions as to the numbers of our natives still left. Here in Stewart Island I knew a vertical migration had occurred between mid-autumn and early spring; but it was impossible even to guess from what area the birds had been drawn. Undoubtedly the Kaka and Pigeon were, during March, in vast numbers over the few hundred acres on either side of the Rakiahua, along whose banks I was then working; but this concentration might have occurred only in that single district, and every Pigeon and every Kaka might have been collected there from over the whole of Stewart Island. Kaka, Pigeon, Bellbird, and Tui, may, therefore, be very plentiful in these southern woods or they may be sparse in numbers and scattered far apart. On the whole, however, I am glad to be able to say that I favour the former alternative. I believe that these species are still very plentiful.

Chapter XI.

THE KAKA.

DURING February of 1911 the Kaka were in thousands on the lower slopes of the great wooded spurs that run from Table Hill into the Rakiahua Valley. The forest was alive with their movement and echoed with their clamorous cries. A constant shower of rotten wood and bark rained from above, and Banjo ran from tree to tree looking up at the unattainable birds and barking with excitement. About one trunk he circled, barking and sniffing, and then again returned to it still not absolutely satisfied; and I suppose it was this second visit and the tone of his bark that caused me instantly to mark the tree. It was a kamahi of considerable girth, but its shell only, alive and green; the interior was rotted away until almost level with the ground, and the space within—about two feet in diameter—floored with wood powder, dry and sweet. On this brown carpet rested two eggs, small for the size of the parrot, dull white in colour, and evidently much incubated. The interior of the bole had been gouged and chiselled by the sitting hen, until no scrap of it within neck stretch remained unmarked. These eggs, found during the first week of February, were not re-visited

Stage in front of Kaka's Nest.

until early in March. Without cutting a section from the trunk it would have been impossible to have photographed either the sitting bird or eggs, and I did not dare risk the possible desertion of the nest. Upon my return weeks later with my mates Hans and Gilfillan we reached the old camp late in the evening, and that night I could hardly sleep for thoughts of the disasters that might have occurred.

At day-break we started, and, in my eagerness to get the worst over,—just as men ride a little faster with the knowledge of an unbridged river in flood before them,—I far outstripped my companions; I could hardly indeed credit my good fortune when I saw through one of the holes, the head—"the good grey head"—of the venerable bird, and a moment later witnessed her retreat, as, scrambling out of the cavern, she flew softly into the forest. During the lapse of one month the eggs had developed into two large-bellied chicks. These awkward youngsters were clad in grey down, their sprouting tail feathers visibly red and the primaries just bursting their grey sheathings. Kaka chicks present a very curious spectacle, sitting—as is their habit—pressed together, belly to belly, as if for warmth. If disturbed, and whilst settling down again, they exhibit all sorts of curious wrestling attitudes, sometimes as if each was attempting to gain some advantageous stance or grip; and sometimes again they seem a couple of jolly topers leaning against one another for support, and rocking and tottering together in maudlin rejoicings and hiccoughings. Then again, when quiet, and with heads projecting over each

other's shoulders, they recall the stage embrace, when, in the last act, the aged father, his chin resting on the other's shoulder, and showering tears and blessings, clasps to his bosom his long-lost son. With still a month's confinement before the young parrots, their floor in one part concealed a multitude of white maggots,—in fact on account of the liquidity of their droppings the Kaka must have in its nesting hole a considerable depth of pulverised highly absorbent wood moulder.

I had just left, after days of closest intimacy, the Parrakeets on their island, and could not but contrast the sanitary requirements of these two species, and speculate as to what degree seeming trifles may limit the numbers of a breed. In our cock-sure, human fashion we may consider any hole good enough for a Kaka, yet for each site chosen the birds have no doubt discarded a hundred on the score alone of insufficient drainage. How far, indeed, the number and survival of a species is dependent on suitable nesting conditions has, perhaps, never been sufficiently taken into account.

In another volume the case of a pair of Kingfishers has been given; and probably to many kinds of birds certain minute conditions, easily overlooked, are indispensable. I believe that, given perfect nesting conditions, the bird, if within miles of the spot, will always arrive.*

*The spring of 1911 will long be remembered in Hawke's Bay for the continuous and violent nor'-westers of September, October, November, and early December. On the pumiceous area of Tutira we had that year some four hundred acres of ground ploughed for swedes. The crop, of course, was ruined, but it is an ill wind that blows no one good, and a pair of Banded Dotterel rejoiced that season in the discovery on Tutira of a monstrous sand drift newly developed and eminently suitable for breeding purposes. This season (1912), though but a few roods of "blow" remain, I notice four or five couples nesting.

Like young Pigeons, Kaka nestlings are probably extremely hardy and easy to rear, and the collection of their food a matter of no trouble to their parents. It is probably taken in large quantity, at long intervals; at any rate, they are able to endure fasting without complaint, for many hours. Only once, and then from a distance, did I see them fed, the male bird seeming to jerk into the cavern, what appeared to be one of the great grey grubs so common in the rotten timber of our New Zealand forests. Another time I noticed a parent bird high on the tree tops carrying in its bill what again appeared to be a wood grub.

The greater part of two days was spent by the three of us in the erection of a stage, and during intervals when we ceased work, in order not to alarm the birds too much, I used to watch the nest tree from a distance. On one or two occasions the chicks were visited, as I could learn by their cry of recognition and welcome, but they were neither then, nor at any other time in my presence, fed; and neither then nor at any other time did I hear that appeal which, from whatever breed, is unmistakably the call of hunger. The chicks were able comfortably to endure long fasts, and were probably gorged at dusk and dawn.

The stage built on this occasion was of the most substantial proportions. The uprights were young pine trees lopped of their tops, the cross pieces straight kamahi limbs; whilst tree ferns, as usual, composed the floor. Many twenty-five and thirty feet rimu saplings were raised on to the finished stage by the gigantic Hans, their butts passed downwards between

the cross piece and buried firmly in the ground. Their beautiful tops—those "fountains of green"—then completely veiled both man and machine, and on my stage I sat or stood in a verdant grove of pendant pine. Some fifteen feet distant stood the kamahi trunk, penetrable by four different openings, the largest and main entrance facing north-west, the second, a knot-hole, through which the hen used to spy and listen; the third might have been a bolt hole, opening just above the tangled roots; the fourth was the funnel or chimney of the hollow bole. Parallel with the kamahi bole and about two feet distant grew a perfectly upright branchless totara sapling. It was, perhaps, four inches in diameter, and was the Kaka's usual route of approach. The exit of the bird was by way of the rough exterior surface of the kamahi. The erection of the stage had meantime been carefully watched by the hen parrot, of whom, on the high, bare boughs we now and then obtained a glimpse. We could see her eyeing our work from above, not shy or timid in any degree, only extremely cautious and anxious for very thorough investigation. I found, in fact, that in the Kaka I had to cope with a singularly wily bird, and soon began to doubt if I should succeed in coming to close quarters and getting within camera range. Neither of the parents evinced the least anxiety about feeding their young, and I knew from the absence of the nestlings' hunger call, that they were equally indifferent. They were fed, seemingly, like the folk in Swift's tale, their immense stomachs crammed in one act.

Early on a March morning, cloudless and still,

Kaka spying through key-hole entrance.

I settled into my bower and heard Hans and Gilfillan tramping off through the forest and talking so that the birds might know that more than one person had departed from their tree. Whether Parrots can count I know not, but from the beginning of my vigil the birds, I am convinced, somehow knew of my presence beneath the waterfall of greenery. The male was very wild and shy, or possibly merely unconcerned, and I saw but little of him. Two or three times a day he would arrive, circling the nesting tree, and uttering a ringing and most melodious "u-wiia," "u-wiia." He then settled on some perch not very near the tree, and there the female joined him. He never stayed for any length of time, and would finally depart with the harsh screech so well known, "u-che," "u-che," uttered several times. The hen managed to return so silently that often my first notification of her presence was the renewed fall of bark and stick from far above. Often she was so directly overhead that the waste, torn off by her bill, filtering through the leafy screen, would fall directly on to the mirror of my camera. She never seemed to rest, hopping easily from bough to bough, or swinging leisurely by her bill, testing and tasting each branch, and without cessation stripping, shredding, and tearing bark and branchlets. That day until the darkness began to fall I waited, having for hours hardly dared even to cross or uncross my legs; but the nestlings never evinced the faintest sign of hunger, nor the parent birds the least anxiety about the nourishment of their brood. The whole of the next morning again I waited in vain, and it was not until cooeeing and shouting to

attract attention at noon, that a new idea suggested itself. I had noticed that these signals repeated, brought the bird lower down from the tree tops than I had formerly seen her, and determined now to try if whistling and singing would create anxiety enough to lure her within shot. It was trust in us—gratifying no doubt in a way, but vexatious—that kept her away. She had grown accustomed to our presence; she was sure no harm was intended; there was really, therefore, no particular reason why she should inspect the twins. By this time, too, all idea of concealment on my part had been abandoned. The Wekas of the locality, attracted by the lopped timber, were patrolling the fallen stuff and regaling themselves on the coprosma berries. Again and again, after their discovery of the bolt hole, they had caused me the greatest anxiety. As I have already said, in the Wekas' estimation every hole exists, not to be visited once, or twice, but many times a day, always, I suppose, on the off chance of finding something new and strange. The report, then, of such a treasure trove as two Kaka chicks sitting bolt upright in a dim light, stomach to stomach, was soon spread abroad. On my stage I was kept in a nervous agony lest these precious chicks should perish almost before my eyes. They were to the Wekas as irresistible as are to boys the caves of a wild coast or the ribbed frame of a sand-anchored wreck. No sticks could keep them off, even my pocket Keats was sacrificed. They would—though it was hard to reach—explore that hole. Any risk was well run for the inexhaustible pleasure of obtaining a peep of the monsters

within,—of examining and re-examining them. The youthful Kaka thus visited made at first a great commotion causing the old bird to drop from her heights—but even then as if there was no great haste, and as if she was in no great anxiety. Later I noticed that when a Weka looked, or, as once happened, ventured wholly within, a shake of the Parrot's wings would cause a flurried exit. As I have said, my cooeeing and hallooing for my billy of tea at noon, had to some extent drawn the bird nestwards, and I now determined to sing, on the chance that the novelty of the noise might attract the bird near enough to the nest to allow me to obtain a photograph, in fact,—though it gives myself and my singing powers away,—to make her anxious on behalf of her young. Mine that day were no ordinary melodies—I had sent my assistants home to camp, as I still desired to retain their respect—and never again in Stewart Island will there be such singing heard. "The Brave Old Duke of York" fixed the bird's attention; she clambered down to such parts of "God Save the King" as I could remember; and an execrable chanting of the old Latin Primer jingle must have made her tremble for the very reason of the twins. At any rate down she came and I took her in the very act of peering into the knot-hole entrance, wondering perhaps if the nestlings could have heard the sounds poured forth, and yet continue to live.*

*The words: "Common are to either sex
Artifex and opifex
Conviva, vates, advena,
Testis, civis, incola, etc.,"
should serve to show that the Classics can still, even in these modern days, be turned to practical account.

The plate developed that night in the leaning hut, with Banjo for companion, turned out—for me—fairly well. I was particularly interested, however, in this strange and, as I then believed, unemotional bird; and decided to spend a few more days in her company and obtain more pictures of her in various attitudes. This I now expected easily to manage; but next morning all shouting, singing, whistling, and chanting, failed to move her, and I was again at my wits' end for a lure. Heartily then, I longed for a Christmas tree with its fruit of tabour, pipe, tin whistle, and drum, anyone of which would have been a novelty to the bird. I had nothing, however, with me except a tin mug and some coins. These, rattled violently in the mug, did indeed attract the bird, but she came to me, and not, as I hoped, to her nestlings. It was not until I had divided into narrow strips the flax blades left on the stage, made a green length of twine, fastened it to the mug's handle, and dropped the mug itself with its coins over the edge of the hole and immediately above the nestlings' heads that I succeeded. Holding the string in my hand, I climbed back to the stage and from there pulled this extempore bell till it jangled again.

In this way several more exposures were obtained; and, what was better, on two occasions I got a glimpse of another side of the Kaka's nature. Twice when she sidled down the totara sapling, she crooned very softly to the chicks the most delightful little song, mellow and musical, with the liquid low notes of flute and violin. Before this I had begun to believe her only curious and cold; but now

Kaka Nestlings—Section of tree trunk removed.

when I saw her moved, it was impossible to doubt her feelings towards her young. With claws gripping the rough totara bark, leaning forward to the utmost, and peering into the hollow where sat the grey twins, this effortless music was poured over them like a benediction. As I listened, bending to catch the low flow of sound, there seemed to be in it something that man can never fully comprehend—the joy of a creature utterly happy in its hour, with no ache, like man of sorrow that clouds the past, with no sad foreknowledge, like man, of sorrow to come. There was nothing, I feel sure, of the future in that song, that future which is always to man a clogging weight, and the clinging curse of his high estate. The forest air was delightful; the sun shone warm; that was enough for the bird. Perhaps this Kaka's song was of freedom in the wilds, of sun and rain and wind, not consciously known, but felt, and their deliciousness finding a vent, as love, too, does, in song, or joy of children in their play. Perhaps it was the song that, as they melt and blend, the sun shines, the water reflects, and the wind spreads everywhere; for light, like water, can wet the leaf till it shines as in a shower; for water can murmur in the tops like wind, and roar through the forests like a leaping sea; for wind can patter in great drops through the breathing greenery, or pour itself like a tide through the swaying boughs.

The vocal powers of the Kaka are by no means sufficiently appreciated. No bird in the woods, I believe, has more tender, flute-like notes; nor can I imagine anything more joyous than the clear ringing "U-wiia, u-wiia," of the male bird's cry when circling round about his nest.

In the autumn the Kaka has also a "chock, chock, chock" not unlike the encouragement given by a rider to a sluggish horse.

Next morning, for the third time, I had difficulty in bringing down the female. Not only did she remain utterly unmoved by my singing, shouting, and yelling, but the mug jangling had also palled. They were sounds stale to herself; she knew, moreover, that they were harmless to the family. Again, therefore, I had to extemporize a lure, and this time it had to be one of the nestlings. The same flax line was used, but stripped at one extremity of its green integument, and only the strong white fibre left. This, by rubbing in my hands, was worked as soft and pliable as silk. It was then attached to the larger nestling's leg so that at each snatch the disturbed youngster sung out; thus again I got exposures, and, what was more interesting, began to get an inkling of the parent bird's intelligence. In fact, during this day and afterwards she began to lose all fear. Perched within two feet of my arms she would watch me in her inquisitive, parrot manner; then with an easy hop or silent flight would peer into the gloom of the nest, her head first on one side and then on the other and appear to be watching the agitations and tremors of the flax line.

During the last day of our acquaintance I am sure she knew that in some wonderful way, I, although fifteen feet distant, was somehow or other disturbing her children. She had, in fact, worked out cause and effect; just as the ranging dog, who notices beside him a small stone in motion, smells it, looks back at the master who has flung it, and presently returns to heel.

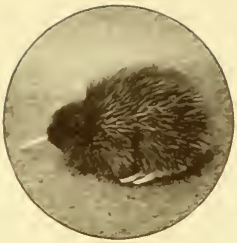
Kaka on nesting tree.

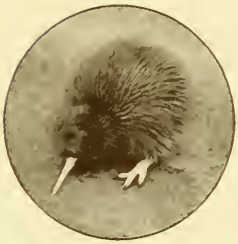
Often before I knew this Parrot well, I own I had thought her merely and solely philosophic, her solicitude over the manner in which her chicks were disturbed deeper than over what she might reasonably have believed their danger and pain. It was not until I saw her moved that justice was accorded to her qualities of heart. Six months later I re-visited this tree with McLean, and from the worn state of its interior and the signs of traffic about its immediate vicinity have no doubt the twins grew up and reached maturity. In its cavity, trodden and fouled, we discovered a penny—one of the coins used in the tin mug; and which must have been jerked out; and it was with this lucky penny in my pocket that we found that same day our first Kiwi burrow.

Chapter XII.

THE KIWI OF STEWART ISLAND.

THE greater part of October was spent on Table Hill looking for Kiwi burrows. Even under favourable conditions these burrows are by no means easy to find, but during the whole of our search, the light, owing to almost continuous rain and gloomy skies, was deplorable. In these wet woods no imprint holds its shape for long; drip from high trees falls on loose leaves, and all is soft, yielding, and in process of decay. After each shower even the faintest traces of traffic are obliterated, and the forest floor again evenly plastered with granite grit, sand, and wet moulder of wood. Rotted branchlets and boughs, still in their husks or jackets of loose, dark bark, lie thick on the spongy surface. Not infrequently in these forests, too, the boles of the huge prostrate trees are merely shells, crusted with rough lichens crinkled and curled, or clad in mosses, aping in hues of softest green and yellow, the forms of ferns or, of a darker colour, stiff and erect, like thickets of fairy pine. From the sides of these rotting boles hard fungus projects in ledges, like the lip ornaments of savage belles, or, peeping from beneath shelter, toadstools support themselves, each of a different





Kiwi Chick.

age, and each with its parasol unfurled. Then the growth itself of the larger trees, differs from that of our more tropical northern bush. There the rich soils nourish an upright brood of trees; here in Stewart Island the kamahi and ironwood, like infants, creep before they walk, and from their boles, prostrate in youth, arise in later years an equality of rival stems, just as from pegged-down shoots in a rosery, burst upright growths.

Through these forest lands, more open than those of the warmer north and barer of supple-jack and vine, distance is visible. On all sides arise the naked boles of clean trees, that slough their skins as loose skirtings or innumerable scales, and thus discard their orchid, fern, and epiphytic growths. From verdure below to verdure aloft they rise, piercing twixt earth and sky, a diaphanous mist, a twilight greenery, that veils a section of each stem, and in a shadowy way bisects each bole. This strange effect is owing to the habit of growth of several of the coprosma tribe, shrubs of some fifteen or twenty feet in height, free of branches beneath, and bearing in layers their greenery on top. This is, of course, the general effect, never sharp cut or clearly defined, and differing in degree in every dell and glen. The trunks nevertheless, in parts of this open forest, are distinct from the ground upwards to fifteen or twenty feet, then become veiled in the coprosma tops, for a second time to reappear, unclad and clean of the ferns and parasitic growths so comparatively scant in these forests of the South. There is the strange result, therefore, of three tiers of growth; the lowest,

lichen, moss, liverwort, dark green companies of Prince of Wales' Feather fern, lighter green Hen-and-Chicken fern, shining polypod, and lomaria, the last named, day after day, during October, harbouring in their shuttlecock crowns, white nests of hailstone drift; twenty feet above are the massed growths of coprosma and other shrubs; highest of all, spread the green tops of kamahi, ironwood, and rimu. In some degree, too, each of these green stages supports its own particular birds, thus the Kiwi and Weka haunt the mosses and ferns; the Crow, the Fantail, the Warbler, the Tit, the Bush Creeper are usually to be found on or about the middle floor; whilst the Kaka, the Pigeon, and most markedly the Parrakeet, love the chief seats in the synagogue.

Four Kiwi burrows were obtained during our perambulations of the forest, one containing a parent and chick, one, a sitting bird and egg, another burrow had just been vacated, and in the debris, howked out by the inquisitive Weka, were mingled many scraps of pale green egg-shell. Another was a mere hole worked into the hill-side. Finally, there were two "beginnings," as at school we used to term structures begun and left. Besides these breeding burrows we found also a couple of Kiwi lodges. The entrances of all of the burrows and of each of the lodges, faced the north or the west, and thus opened to the warmth. The burrows seemed to be mere temporary conveniences, although, I believe, probably re-occupied when required. The lodges were of a very different character and appeared by their length of tunnelling, and interior ramifications, and by

Debris of vacated Kiwi's nest.

the well-worn routes in their vicinity, to be the permanent homes of Kiwi families. The breeding burrows, on the other hand, were quite shallow, and their entrance tunnels short. That of the Kiwi and chick was two feet six inches in length, that of the Kiwi and egg one foot nine inches; the length of the tunnel of the vacated nest was two feet six inches, and that of the scraped out burrow two feet six inches.

Our first discovered Kiwi boring, that of the parent and chick, was found late on a gloomy afternoon; all day long we had been wandering a chain or so apart, and had now edged in toward one another for interchange of views and news. We were dejected and wet, and Banjo, for hours run on a rope, was dispirited too. In his novel role of field naturalist, and debarred from slaughter, the dog had perpetually been taking the wrong side of saplings, sound snags, and bush vines, and had endured a score of times, with struggles and chokings, the pangs of partial strangulation. Like a child in his nurse's hand, hanging back at full arm's length, and all unsatiated gazing over his shoulder in wonderment of travelling menagerie or village show, Banjo was dragged that live-long day. Mostly, I imagine, he marvelled why Wekas should be spared, and luncheon time was to him the most miserable ten minutes of the day, for then it was the Wekas came up to investigate and prowl around. I knew his feelings; for have not I myself been but recently "saved," and I could sympathise from the heart with his desire to slay. After a chiding or two he could bear to watch the birds; shivering with pent eagerness he could endure the slow approach, the random

fossicking; standing stiff and stark he could even allow the bird to cross his field of vision, but with its startled dash to cover, the old Adam surged in his veins and only the tug of the rope recalled him to duty towards man and forbearance to his fellow beast.*

Wearied in well-doing, the three of us were standing together, when trodden into the mould, almost buried, soaked, and with its barbules run into points like a girl's wet hair, one small Kiwi feather was espied. Close by, there projected a flange of sound timber clasped by an intricate rootlet growth; it had in one part been slightly frayed and scraped, and was thereabouts barer of red mould and of grit, splashed up by the drops from the boughs above. These were the sole clues, for on either side of this hummock or flange, the trail became at once lost in loose leaves and unstable twigs that would hold no impress. Banjo, however, gave no sign, not even when I manœuvred him athwart the hole; it was not indeed until I showed him the entrance that he corroborated

*It is the poacher who can most vividly realise the pleasures of the dog, and had my own past been sinless I should have abhorred poor Banjo's lust for blood. As it was, his tremor of eagerness bound us in brotherhood, and recalled the memories of schoolboy days. It was then, assisted by the gardener, now a very dear old friend, and his dog, "Bruin," who scared the rabbits covertwards, and with a roll or two of strawberry netting, that I used to crouch during dark nights, at a particular sheep gap in the long dry-stone dyke, and project myself on the rabbits, driven from the crops and rushing homewards. The deep joy of each seizure, the pounce in the black darkness, the alternations of hope and fear, the rapid handling of the enmeshed rabbit—touches as tender and quick as those of love itself—are vivid still, and must be as near an approach, as mortal man can attain, to the ecstasy enjoyed by a sporting dog in mouthing his game. If, haply, reincarnation be a truth, I hope to return a boy, die before I reach the age of what is called sense, and then, rising as "on stepping stones of my dead self to higher things," re-visit earth as a curly-coated retriever with the run of a wild Argyleshire moor, and a master mad-keen on field sports.

Kiwi and Chick.

our find. With one long sigh of dog's delight, and with one long ecstatic inhalation, his strong blunt nose burst the loose fibre apart. In the miserable light of that dark afternoon there was little to be seen; but, listening at the burrow's mouth, we could hear from time to time a faint sniffing noise, and this, I believe, proceeded from the parent Kiwi; at any rate throughout a long acquaintance with the chick, I never again heard it. The hole was tunnelled out of slightly rising ground beneath the bole of a living kamahi; this tree had grown after the manner of its kind in Stewart Island, at first parallel to the ground and had only later sent forth tall, erect shafts. Heaped above its prone trunk, and acting as a farther shield from penetrating wet, masses of fallen timber were piled in rough pyramid form; the hole was overrun with Billardier's polypod and the burrow's mouth darkened and screened with tall lomarias. The length of the tunnel was about two and a half feet, the height of the breeding chamber about eighteen inches, and both roof and sides in this wet season, smeared smooth like undried plasterers' work. Through a tangle of gnarled roots, there was an alternate entrance into the tunnel. The birds, whilst still undisturbed, sat or rather crouched with their backs to the light, the bills of neither parent nor chick being visible. The actual nest was quite a considerable structure, the base composed of twigs and sticks of an inch round, and lined with fern fronds and leaves.

We now began to experience the trouble we were to endure again whilst Petrel nesting. The more the burrow was opened up, the more restless grew the old Kiwi, and observations

under normal conditions became impossible. It is worth recording, nevertheless, that, even when wild with desire to escape, although the old bird dug desperately with his bill, tearing out and taking beakfuls of earth and brown root fibre from the sides and ends of the chamber, not the slightest attempt was made to scrape out an exit. The bird, however, could and did kick backwards violently when touched; on one occasion somersaulting his innocent child. The posture in defence was somewhat similar to that of a young Hawk. In attack, the Kiwi seemed momentarily to stand on his "tail," projecting himself forward, and striking with the spurs of his thick fowl-like legs. Beyond showing the picture of the bird, and in the Kiwi's case a disgustingly bad one at that, photography of species in their burrows is worthless. None of the attitudes are normal and the feathers soon get tousled and the bill encrusted with dirt. At the least touch, moreover, the Kiwi sheds its plumage—that plumage so harsh at the tips, so lustrously soft and silky beneath.

At last the bird broke away, and a final glimpse revealed him moving off at a high-stepping trot, and making no attempt to dodge into cover and hide. He was travelling, I am sure, on a trail well known and often used.

The chick now left an orphan on our hands, was just like a little hedgehog with a long bill. In "Dick," as he was afterwards christened by his kind hostess at Half Moon Bay, the bill was of a whitish ivory hue slightly tinged with flesh at the base, and was seemingly still used to some degree as a means of support. His claws were pale lead colour and noticeably turned in. The

Kiwi and Chick.

age of this chick was hard to estimate, but the umbilical cord seemed not yet to have become perfectly healed, and about it were clustered many large white maggots. His belly was immense and resembled the unabsorbed stomach of new-hatched fry.

When first seen at close quarters he was shivering violently, because of the cold we then believed. From later observations, however, I am convinced it was a similar tremor to that already noticed by me in young Pigeon and in young Cormorants, and which may be a process of growth or digestion, or muscular development, like the violent wing vibration of a newly-hatched moth.

As plates had run out, and as it was considered probable his parent or parents would return, the little fellow was placed in my sou'wester, and in it, with many wooflings and whimperings of disapproval, was carried to camp. There on a grey blanket he was photographed, and later carried back to the bush.

When replaced by me in the breeding chamber, he picked up and swallowed—I could see the morsels passing down his bill—what appeared to be several tiny bits of peat or leaf mould. A small worm offered him was refused, and never expecting to see the child again I left the spot.

Late the following afternoon I revisited the site of the burrow and to my surprise found him still well and warm. He had not, however, been visited by any old bird, as I could tell by the position of certain sticks and twigs, still not brushed aside. He was, therefore, again carried to camp, and there remained in a butter box during the rest of our stay. At night when the

lights were extinguished he could be heard feeling and tapping along its sides, murmuring and grunting. At Half Moon Bay, resident in a great packing case well littered with peat he became very tame, and when visited would look up with his little rat's eyes just like a friendly pig expectant of a trough refilled. Usually the worms, gathered for him, were put in a shallow dish and when callers came to see him—and they were many—his first action was to explore this dish in anticipation of extra rations. He would readily take worms out of his friends' hands or when dangled to him. I noticed that when looking for them on the ground his bill was carried an inch or so above the litter, and used to feel softly and explore the peat, just as a blind man uses his staff slantingly to poke and probe the ground immediately in front of him. At times, too, the bill was carried much in the manner of a pup who has chanced to retrieve his master's stick by its end and holds it aloft with elevated head in order to avoid concussion and jar to his mouth. If, whilst investigating the peat a worm was located, "Dick" would bury his bill to the very hilt, in the brown mould, and then, in this attitude, wrench it from side to side as if to obtain a wider range at its nasal extremity.

At any time, if his feathers were suddenly touched, he would leap aside with agility. Eventually I took him, then a fine well-grown lad, back to the forest, selected a spot with many worms, and left the poor little beastie boring delightedly into the cool, moist, clean, and mossy mould.

The second Kiwi nest provided perhaps the

Kiwi Lodge.

deepest tragedy of our trip. It, too, was found late in the afternoon, for we had been walking for hours uncheered by even a feather or the slightest sign. The gloom of the darkening bush had permeated our souls when Banjo, suddenly plunging forward into high water-fern, snatched loose the rope. Over the little bank I threw myself after him; and, although too late to prevent the seizure, was still in time gently to loosen his hold of a Kiwi, drawn to the mouth of the hole by the skin of its back. Banjo had a beautiful "mouth"; I had already taken several birds from him uninjured, and I thought that as the Kiwi had been drawn but a few inches from his egg, that all might yet be well. The depth of the burrow was less than two feet, the entrance wide, and the dog had thus instantly been able to reach the bird. Looking in we saw the great pale green egg faintly visible, for the retreating male had retired beyond the nest.

This hole was tunnelled into a very steep bank of hard, dry sand, looking due west; and the entrance, scraped out at an angle, faced north-west. From the manner in which the bird was drawn out, I am convinced, that, as in the case of the other Kiwi described, his back debarred the light and blocked the tunnel's mouth. The egg I never saw again. The day following its discovery, was one prolonged blizzard—hail, sleet, and icy rain. The second day was almost equally abominable; but we determined under any conditions to attempt to obtain a photograph of the egg, that egg which I had pictured to myself day and night throughout our whole trip. We duly reached the spot, 'my heart foreshadowing all calamity,' and on the very rim

of the burrow's mouth my eyes fell on chips of shell and fragments of integument.

There are facts too dreadful for immediate admittance, the endurance of even the strongest mind is limited, and nature has arranged that there should be an intuitive pause for recuperation, and that the crushing blow should not instantly be felt. This instinct—not at once to face the worst—may perhaps have saved my reason, whilst during some terrible moments I endeavoured to affect to believe that the egg had merely hatched. I knew it had not, and that some Weka, thrice accursed, born in the eclipse, had found the nest deserted, and smashed and eaten the egg,—my egg. Oh, how I had longed to handle it. My first impulse—I can afford now to acknowledge it that the prompting was resisted—was to kill McLean with our small bush tomahawk, and throw his body into the peat stream running by. Could it have brought back the egg intact no doubt I would have done it; and McLean was too good a fellow, too much of an enthusiast himself, I knew, not to have appreciated my motive and taken the action in good part.

The remainder of the day I passed in an agony of remorse. If only I had had the great egg in my hand—even for a moment—one touch only—it might have been larger even than usual —perhaps a double-yolked Kiwi egg—even a very large one at that—for it stands to reason that there must be double-yolked Kiwi eggs of lesser and larger size—and I had resisted taking it, for fear lest the bird should desert. How perfectly idiotic to have resisted the temptation —to have resisted any temptation—at any time.

I drank to the full of that most genuine remorse —the remorse felt for actions undone, for sins, alas! uncommitted, and Banjo, oh my brother, even in those moments of agony, I did not blame you. I, too, have been swayed by impulse all the years of my life; and perhaps you, also, had a grandmother who came from County Cork.

The third breeding burrow discovered had just been vacated and had contained a more carefully constructed nest than either of the two already described. This we could tell by the large amount of brown, withered, lomaria fronds howked out by the Wekas, and amongst which were still mixed, scraps and chips of pale green shell. Like each of the others this entrance faced the sun; like each of the others the tunnelling was quite shallow and short; and, like each of the others, the track of approach and exit became at once indecipherable. Close to their nest, the birds' trail happened to pass over the creeping rhizomes of a net of polypod the scales of which, I noticed, were slightly worn and a little barer of their greenish fur, and the clue thus supplied made the actual discovery of the burrow an easy matter.

A fourth breeding burrow found also faced north. It was slightly deeper than those described, unfinished at the date of discovery, probably already deserted, and at any rate never again touched.

Of the Kiwi lodges—as, in contradistinction to the breeding burrows, they may be termed—we obtained two. One was in a steep sand bank on the forest's edge with three easily seen and well beaten divergent pads. The other lay beneath the bole and torn up roots of a long-

fallen rimu. These lodges we were unable to explore, but probing with a stick revealed a length of seven or eight feet, with side passages and ramifications. In each we could feel a bird with our long supple-jack, and hear him moving when disturbed, rumbling like a subterranean rabbit.

During the weeks spent in this forest I had mentally backed myself against Banjo—my height and sight against his nose—and although he ran on a rope he could at will, either, as the Collect puts it, "prevent or follow me." Of the four test matches thus played—the two breeding burrows with males sitting and the two lodges containing birds,—I won the first, in an innings with many wickets to spare. The second was an equally easy victory for Banjo, ten holes up and eight to play. The third—the sand bank lodge—was just won by me. Honour bright. I believe I sighted the trail the sooner by an infinitesimal space. This time I retained the rope, but we slid down the bank together in all the eagerness of a hurried touch-down. The fourth match—the rimu lodge—I also won, thus in covert proving the huge advantage given by height and the ability to look downward and forward, and suggesting the reason why birds have come to rely so little on the sense of smell, so greatly on that of sight.

I believe that during day-time the Stewart Island Kiwi not infrequently moves abroad, or at any rate lies out in covert; and, speaking generally, that the bird is less strictly nocturnal in its habits than, according to observers, are other breeds of Apteryx.

These southern forests, it must be re-

Entrance to breeding burrow of Stewart Island Kiwi.

membered, in spite of their less tropical jungle growth, are on the whole darker than those of the north. Some of the filmy ferns for instance, species that luxuriate in shadow, deliberately in these southern woods expose their leaves to light, one in especial, noticeably, for this purpose, twisting its fronds on the dark, delicate stipes. This lesser average degree of light is owing to the greyer sky, and to the comparative sunlessness of the climate; so that gloomy weather during the short winter days, cannot be far different from bright nights in summer, and this Kiwi of southernmost range, may have thus grown accustomed to travel and feed in either light.

Again, on one occasion, high on Table Hill in February, about noon, and on a cloudless day, Banjo flushed a Kiwi from a considerable patch of dwarfed red tussock grass. This bird, a female, excessively fat and with an ovary containing many eggs—the largest of buck shot size—had either been feeding or lying out in a very strong light.*

On another occasion—in October I believe—we again interrupted a Kiwi feeding during the day. This time Banjo made a dash into a clump of that most lovely and most graceful danthonia grass, called after the botanist Cunningham. Although I only heard the rustle of the scared fowl, my supposition is based on the puzzlement which for a fraction of a second made the dog pause. Except on that solitary

*During dissection of the bird I noticed an odour from the intestines exactly similar to that proceeding from the guts of wild pig, hundreds of which during the eighties I have killed on Tutira. Probably some worm or grub is common, therefore, to the pumiceous areas of Hawke's Bay and the granites and sands of Stewart Island.

instance in February, the dog had never hunted Kiwi, though he knew all other birds but too well. For the briefest possible space he wore the look I remember to have noticed in a young spaniel at Home, when he first scented roe in the coverts. I think from that hesitancy, as if at an imperfectly recalled scent, also from the height at which he seemed to catch it, and lastly from his plunge at the rope—a dash rather than a pounce—that the bird was a Kiwi and again feeding in the day time. I am convinced indeed that twice or thrice Banjo was on the scent of Kiwi feeding or lying out during the day time, at any rate not in lodge.

There were perceptible differences on these occasions in the dog's method and emotions, but the differences were as slight as those evinced by a spaniel on the scent of rabbit, pheasant, hare, or wood-cock. Finally, I believe the bird drawn from his hole by Banjo had been, immediately before our arrival, off his egg. The little we know of that mystery called scent leads us to suppose that it rather falls than rises; and Banjo, when he snatched his rope from my hands, had burst into scent overwhelmingly strong among the water fern and six feet at least above the nesting hole. A sitting bird, moreover, gives off comparatively no scent, as we actually experienced in the discovery of our first Kiwi nest, when Banjo, who possessed an excellent nose, had to be shown the hole before he owned the bird.

This fine breed of Kiwi is still plentiful in the woods of the southern part of Stewart Island, and protection alone is required to ensure its survival.

Chapter XIII.

MASON BAY.

MASON BAY, on the west side of Stewart Island, is a bay in which willingly no vessel ever did take refuge or ever will take refuge. Besides being open to the southerly swell a raging sea runs whenever a west wind blows, and on the shallow bottom far out the combers curl in long, white parallels, or, narrowing to fit the crescent of the bay, assume a phalanx form. Nine magnificent miles of smoothest beach stretch between Cape Ruggedy to the north and the Ernest Islands to the south. Westward lies an alien continent across vast water solitudes, eastwards dry dunes, the playground of the winds. Blown sands, clean seas, heaven's vault above, and space illimitable, these are the features of the bay. The humidity of this part of Stewart Island is well illustrated by its physical formation, and the coast line is a compromise between, on the one hand, dry gales and drifting sand, and on the other, a great rainfall and plant life that binds and creeps.

Towards the south where the projecting foreland, rock, reef, and islet mass, called

Ernest Islands, has afforded some little shelter, and towards the north, where Cape Ruggedy has also to some extent broken the full blast of the gale, rise steep, almost precipitous sand cliffs. They form a sea-wall corresponding to the length and fitting the crescent shape of the Bay and at either extremity north, or south, of this natural rampart the travelling sand is blown from the brown sea floor, whirled up the cliffs and shaken abroad over the inland woods.

About mid-way between the northern and southern horns of the bay and where the gales strike with concentrated force, this wall has given way, but not as a whole even here, rather it has been pierced by numberless narrow gorges. Relics of its former entirety survive in the form of cones and peaks, bound with creeping plants, tussock grass and flax, and on whose peaks the Skua breeds.

Immediately behind these peaks and over-blown walls, lie stony terraces and stony slopes and steppes—a net-work of dunes, which has assumed all the delightful shapes of travelling sand—its pinnacles, head-lands, hog backs, cliffs, cornices, deltas, running skees, and slopes with sides as smooth as snow.

Even in this part of the beach however, where the ultimate triumph of sand and dry gales would seem to be most perfectly assured, a barrier to their joint dominion exists in the form of a small fresh-water stream. Everywhere this brook obstructs the sand, absorbing the dry showers as they fall from the landward terraces, and often forming on the beach a miniature bar behind which a long shallow lagoon forms itself, and where the wagging

New Zealand Dotterell on eggs

wisps and wreaths of grey inland drift, are lost like snow on water uncongealed. About the mouth of this small stream, therefore, the drift sand is to a considerable degree checked, and a strip of bush running far inland enabled to survive. On the edge of this ribbon of woodland and half a mile from the shore stood the wharé where we camped. Sand, nevertheless, in two great sliding drifts has already passed both on the north and south beyond this Castle Perilous, and it may be if the supply is large enough that these two streams at no very distant date will overlap and meet, and that at a still more remote period the strip of bush will also be submerged. On the north, one of these drifts has passed over the shoulder of a wooded hill and is pouring itself into the plain beyond. On the south, stands a granite hill, but its bulk and height are really a less efficient protection to the hut than are the living woods of the valley and the wide wet bed of the little stream.

This hill much interested me, for on its surface two synchronous processes could be observed at work; to the leeward, enormous masses of sand piling up, and on the side facing the beach, the original cover of the hill each season being stripped away. Up every bare precipitous rocky surface the sand is alternately whirled by the wind, and washed down by the rain. On the upper portions of the peak, those surfaces facing the drift are highly polished with the dark sheen ice carries beneath a gloomy sky,—polished and burnished—not smoothed, for the sand blast has ridged them with innumerable infinitesimally small striations, easily felt if the finger nail be run over them.

To leeward on the other hand the surfaces are rough and fretted, showing how the furious overblow of sand and the whirling drifts, have eaten out the softer constituents of the granitic rock, not very much unlike the manner in which water works on shelly sandstone.

At the base of this hill extends a wide and almost level plain, and there again I was struck with the similar action of flowing water and of drifting sand. Rather indeed was it a river-bed than plain, a river-bed moulded and scooped by sand laden hurricanes, and with all the evidences of a current marking its course. There were the curves and sinuosities of the stream, its deltas and drifts, its steep stony banks and raised flat terraces,—each miniature boulder held its tapering tail of sand, each rough stone was clear where the current struck. It was in fact the channel of a stream, not of water but of sand, and which moreover flowed uphill, impelled by the weight of the westerly gales.

On these several hundred acres of sand drift, dune, and stone strewn plain, each year a few of the New Zealand Dotterel breed. They arrive about the middle of October, and it was on the flat described, that on November the 7th we noted a couple of brace.

Behind us rose the granite hill, deep based in yellow sand. On the levels, except for the private store each standing stone or plant could hoard, the gale allowed no sand to rest. Across the plain and over the burnished granite chips it trailed a ceaseless passage of dry clean grain, and the lee of each yellow tussock was filled by a brown smother and whirl of eddying sand.

Each was fed to the full, yet each seemed, miserlike, to be attempting to grasp more than it was possible to retain.

After a very thorough, albeit unprofitable investigation of this flat, I crossed the little stream to search other equally likely looking ground—ground where, on an earlier visit to Mason Bay, I had noted young Dotterel. Likely-looking as the spot was, the conduct of the birds forbade undue hope, one of them running on my seaward flank, skirmishing alongside of me and always about equidistant.

In another locality a pair, whose nest I had begun to believe must be somewhere near, when for a moment I sat down wearied with the intolerable gale and the flying sand, perched on a little kopje, the one beside the other, at a few yards distance and inspected me.

Few experiences have been more depressing to me than this dispassionate curiosity of birds, whose nests for hours I had been looking for. It was proof positive that no eggs were in the vicinity. I began, in fact, to be alarmed lest everywhere the young had been hatched and we had come too late.

That afternoon my suspicions seemed to be confirmed. There was near the beach a line of higher dunes—relics in fact of the old sand rampart—well bound with tussock grass and one or two of them crowned with green spurge. Thereabouts, the great anxiety of the Dotterel told me there was some particular object for their concern.

About these peaks there were at least five birds, and the admonitory whistle of one, would instantly on my return alarm the lot, so that I

had to outwit, not a single bird or pair, but many Dotterel working together.

Time after time without result I left the vicinity, and retreating, was kept in view, until at a safe distance. Besides the precautions taken by each bird, there seemed also to be a sentinel chosen, to represent the whole party.

At last by a successful stalk and a breathless rush up the steepest peak I just managed to catch a glimpse of a tiny chick, rather blown along like a woman half propelled by weight of wind on her skirts, than moving voluntarily. This chick, but an hour or two old, and with senses not developed enough to know of danger, made no attempt to hide although passing quite suitable cover. In the roar of the gale and the rush of blinding sand, it could probably hardly hear or see. At any rate it ran, or was blown, in front of me until exhausted with the gale and the misery of the cold. Then at the first pause it was instantly overwhelmed by the flying grit.

For perhaps a minute I watched the little creature lying like a dead thing, the sand piling up behind its body as a barrier, till the tiny frame could hold no more and only a grey hummock broke the course of the racing drift. It lay a derelict heap, to all appearance dead, except that at intervals a dark perfectly defined luminous circle appeared in the sand. It was the little fellow from time to time opening an eye and—if egotism of this sort is allowable,—I must say I was delighted with myself for the detection of so minute a fact.

The parent Dotterel was now becoming very anxious, and when I touched the chick, I found what the mother bird, too, knew well, that it

Dotterel showing borings in foreground.

was numbed and weak. I had backed off but a few feet when the hen alighted in the sand, and, settling herself six inches from the chick, fluffed out her feathers till she became an animated ball. The chilled runner did attempt to rise from his grave of sand, but was again bowled over by the gale. The hen herself then moved—this time near enough gently to touch and caress him with her bill—the most gentle touch, the most tender caress. Once more to the utmost she fluffed herself out, she let him feel her shelter and warmth; almost her feathers touched him—not quite—and I have often wondered if, even in extremity, it is thought wise that chicks should help themselves. Her encouragement, however, and proximity braced him to move again, he managed to rise and shake off his shroud, and I could see him getting on to his legs and straining into her down till he was hidden from me in its dark warmth. No one of the genii, arising in an Arabian tale, on lonely shore, to frighted fisher folk, could have appeared more awful than myself to that little Dotterel hen.

In the furious gale that hardly let me stand, the handkerchief that bound my sou'wester to my head, hummed from each loose end. My oilskin waterproof filled like a balloon, blew out, and galloped as drying clothes gallop on a line, the torn edges flapping like flames and parodying a dozen alarming sounds of humanity.

Immediately behind, a most enormous sea was pounding on the beach, breaking so far out that the clappings and thuds of the combers were merged into one continuous roar of sound. It

was miserably cold, a stinging thin rain, just not sufficient to lay the sand, was falling, and the grey sky almost rested on the beach and hid the hills to their knees. Yet that little bird to me had redeemed the day and warmed the whole wild beach. She had braved me in her love and forgotten me perhaps in its practice; indeed I felt shame in watching her with the chick. There should never have been an inquisitive third to pry upon the scene. It was a lover's modest intimacies with his lass or the mother's tender happiness when, alone, she loosens her gown to suckle her babe.

When, after a considerable time, I stirred, the Dotterel hen moved off, running just in front of the chick, now fit and strong again and able to endure the buffeting of the storm.

Next morning we re-visited the flat beneath the granite hill, and again noted the two pair of Dotterel. Each couple was, as on the previous day, somewhere about the same spot; as before, too, each pair simulated uneasiness, though not to a marked degree. I worked the supposed nesting site of one pair, McLean the other; but neither of us was successful. We then proceeded towards our goal by brute force and sheer weight of metal. Nice observation was impossible. The footmarks of the little birds were imperceptible on the hard surface, and were, on the dry sand, everywhere adrift and instantly drying between the showers, in a few seconds obliterated. There were none of those little signs that lead gradually to discovery and make birdnesting so fascinating a pastime. Although large tracts were, in our opinion, impossible for nesting purposes, we strode over

Nest of Dotterel.

every inch of the plain half a chain apart. We marched thus, north and south, and then, with a pause for formulation of theories why the Dotterel must all indubitably have already hatched their eggs and why they could not possibly all have hatched their eggs, east and west. I then got McLean to walk across the plain whilst I hid amongst flax on the edge of a dune; this plan however utterly failed, as it was impossible on account of the sand to keep the eyes open. Running first after one bird and then after the other and attempting capture, I allowed the pair to imagine they were fooling me to the top of my bent. Thus I allowed them to beguile me across the plain and high into the sand dunes. There the birds left me, but, turning instantly as they flew over my head and continuing my uninterrupted walk backwards, I noted their return to the spot marked on the first day by a little cairn. Hoping that McLean might have overlooked the eggs, this spot was revisited. Again I marched over the likeliest ground with one of the birds skirmishing on my flank, keeping about parallel, and chilling me with its unemotional companionship and disinterested scrutiny.

To this day I cannot solve the conduct of the pair. They possessed no chicks; for I cannot believe that, even with young hidden, the parents could have so calmly watched me when seated so near the little cairn. The dissimulation would have been too perfect. There was, moreover, no spot where, within a few minutes, any stationary object would not have been overwhelmed. Neither was the hen incubating her eggs, for after the discovery of a nest, and

later of a second nest, I am convinced we could not have missed the deep brown eggs lying on grey sand.

Perhaps this pair of Dotterel intended to breed somewhere about that spot, and the crouching furtive run and other lures practised were not in use for any particular object, but merely an overflow of functional activity.

Terns, I have noticed flying with little fish in their bills before the hens were actually nesting. Delight in the exercise of the awakening function, causes the male of both the Pied and Yellow-breasted Tit to feed the hen before she sits and, I believe, long before the nest is even begun. Kittiwakes are happy in screaming at an intruder, venturing near the future nesting site of the colony; they have a prescience of what is about to happen, just as a ewe about to lamb begins to bleat, and search for the lamb not yet actually arrived on the scene.

I have also seen different birds, on different occasions, with a straw or a feather or a stick carried, not seriously or for a planned nest, but at the dictate of that mysterious joy felt in awakening spring and instinctively obeyed. I think the preliminary or 'sham' nests that many species build may also be thus accounted for. These actions are as the flirtations that come before love.

Thus far the spots most closely searched had been where Banded Dotterel or Stilt would have chosen to lay, that is, on slightly raised terraces of broken stone, irregularly yet firmly embedded, and raised above the surface but an inch or two, and where therefore no weight of sand could lodge. We had also care-

Nest of Dotterel.

fully looked over such random collections and segregations of pebbles as chanced to occur, approximately ovoid in shape, and size.

No large tussock could conceal a nest. Each was piled up with loose drift, and for this reason we had rather neglected flats of almost pure sand supporting scattered plants of this poa. Yet it was on this type of surface that the first nest was eventually found; and, although, as we well knew, no Dotterel could select a well grown clump for shelter, yet this nest and another got at a later time received a sort of half shelter from small spindly tussocks, or rather I may say that these clumps had been selected because to some extent they diverted the thin drift always, except during heavy rain, on the move.

The eggs lay on bare sand in a deep elegant cup which had been scooped out to fit the form of the sitting bird. The picture of these eggs had to be taken in great haste, as immediately the bird quitted the nest, its lines became blurred and by the time the plate was exposed, only a third of the eggs was to be seen. The ground colour of this clutch of three was a not very pale brown, the shells thickly spotted and blotched with patches of a much deeper hue and most markedly so in a circle round the blunt end of the egg. The tops were comparatively free of deep colouring.

In order to secure a fit site, the New Zealand Dotterel must study the vagaries of dunes, as a broker the share market. He must know their drifts and cross drifts, eddies, and swirls, and above all must select a spot where the sand

scour, whatever wind may blow, can never accumulate in gathered force.

When we had exposed a couple of plates and McLean was gone, spying from a distant flax bush I saw the hen return to the nest and watched her scrape out the gathered sand, ejecting it with her feet in little jets and puffs. She had just settled down when the male, who had been escorting the camera bearer off his territory, spotted me lying in the flax.

Instantly the hen was notified of danger, her mate's piping driving her from the nest, and at each repetition causing her to run faster and faster, till I lost her at last in the flying sand and the dip of the grey plain. After some time, and when all was again considered to be safe, she returned on the wing to within sixty or eighty yards of the nest, and then ran in, Dotterel fashion, with many a pause and many a hiccoughing jerk of the head.

The eggs in this nest were, unfortunately, addled—a fact which I knew the birds might at any time discover, and which made it quite improbable they would sit well to the camera.

I considered myself, therefore, most fortunate in the discovery of another nest high on the shoulder of the granite hill. This nest was on a ridge immediately above a precipitous rock-fall, and where, therefore, no weight of sand drift could gather to inconvenience the sitting bird. Even here, however, so fierce was the gale and so heavy the overblow of sand whirled up the cliffs that the egg-pit had, after each short abandonment, to be scraped out anew.

The nest contained three eggs and lay somewhat behind—I can hardly say, was sheltered

by—a small tussock, flattened and pressed down by the fury of the blast. This clutch was in colour and marking similar to the eggs already described and was equally conspicuous on the light grey sands. I may mention here, as a curious chance, that a large fragment of shell picked up by me near the top of Table Hill, where the Dotterel also breeds, was very pale in ground colour and much more faintly blotched.

The clutches, in fact, laid on the sands would have well matched the peats of the moors of Table Hill, and the egg-shell found on these uplands would have been hard to notice on the granite sands of Mason Bay.

During my first vigil of five hours on the ridge, I could not but admire the way in which the Dotterel managed to compress her feathers. Even in the worst blasts they remained tight to her body and smooth, comparing favourably in this respect with the plumage, for instance, of the Gannet or Caspian Tern.

This Dotterel was sitting hard and had, immediately on my first aproach, by a simulated death agony, given away the secret of her nest. As, however, she returned almost at once to the eggs, I had hopes, even from the beginning, that photographs of a sitting bird of this breed might with caution and patience be obtained.

In order to accustom her to new conditions, unceasing perambulation of the ridge was necessary. At first this promenading was conducted at some twenty or twenty-five yards; but, foot by foot, as the hours passed the distance was lessened. At each of these encroachments the bird would perhaps for a

minute leave the nest, always returning, however, and again settling on to the eggs. Thus during that day and other days we worked up to a distance sufficiently near for a passable picture. Eventually, by piling rocks on the camera legs, weighting it above with a huge granite flake, anchoring it again from the tripod, and by both of us standing on the windward side, in a comparative lull of this six days' gale, we got the photographs shewn.

The owner of the second nest discovered had apparently lost her mate; at any rate, I was by the sitting bird on one occasion for over seven hours and neither saw nor heard a Dotterel in the vicinity,—in fact I never saw or heard, morning, noon, or late evening, a second bird on the hill. This Dotterel on the sand ridge was moreover lame in one foot and running on little more than a stump. The diseased or injured claw was almost gone, and seemed to have been withered and drawn up into a knot.

The New Zealand Dotterel, like the Ground Lark, is liable to diseases of the foot; for another bird on the beach was also suffering from a shrivelled foot very much like that of my friend of the granite hill.

On the seventh day, when the gale was over, and a deluge of rain had set in, from the east, I noticed, too, that she had, as if furious with hunger and using abnormal methods, deeply probed the wet hard-set sand within an inch or two of her nest. Only starvation, I believe, could have induced any bird to behave thus.

Near the nest even the faintest signs that invite attention are eschewed, the bird itself as far as possible avoiding the neighbourhood.

Homestead Mason Bay.

The loss of this sitting bird's mate could, of course, only recently have occurred; but I believe it had occurred, and that now she was attempting alone to hatch out the doubtless much-incubated eggs, and in her effort even denying herself food.

Immediately upon emerging from their shells the young, I think, are taken down to the beach, not at first to feed themselves, but for the shelter and cover of the intricate dunes.

On the spent waves' very edge and where the bubbles of their thin wash instantly disappear the mature birds may be watched feeding on stuff exposed by the falling tide, not probing as the granite hill bird had done, and as the bill formation of the species might suggest that the breed should always do, but very delicately gathering their meals from the surface.

Chapter XIV.

FERN BIRDS OF RAKIAHUA AND MASON BAY.

THE illustration facing page 117 shows the Rakiahua wharés, one of them still sound and safe, the other propped by poles, canted to the east, and leaning like the tower of Pisa. It was the former in which we slept and ate. The latter was the dark room. These buildings had been put up years before, when an attempt had been made to grow wool and mutton on barren sands and saturated peat. On all the exterior woodwork of both lay the grey of lichen stain, whilst portions of the boarding nourished a bearded growth, such as is to be found in the forest itself.

As I write, every detail comes back; and although imagination cannot always fondly 'stoop to trace the parlour splendours of that festive place,' I can see the door with its very doubtful lower hinge, the great fireplace at the far end of the hut, the huge ingle nook, piled up with new-hewn manuka faggots, the open chimney, down which the sooty hail leaped as if to escape the fire. Everywhere spreading stains of damp marked the rough weatherboarding of the walls, and from each rusty nail had run a

Launch on River—Rakiahua.

little stream of hematite. Scraps of information as to routes and destination were pencilled prominently; and everywhere were scribbled the signatures and initials of tourists, who would not willingly let their great names die.

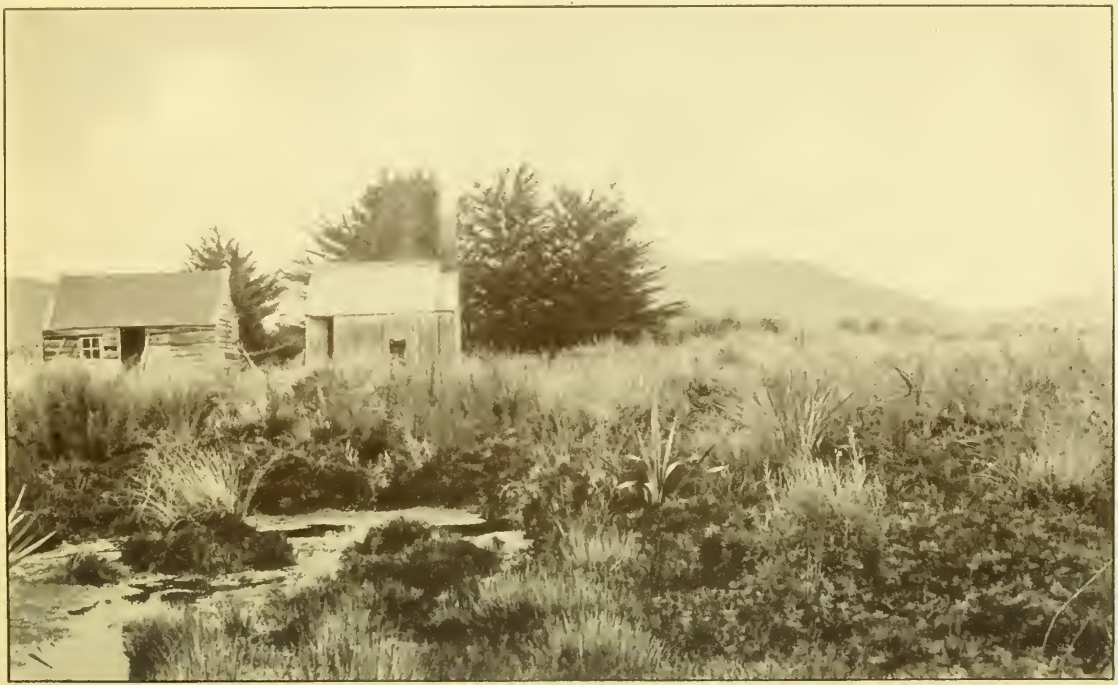
A frying pan, a kerosene tin, a couple of pots, were our culinary equipment, and our washing up was done in a large, chipped enamelled dish. The roof of our living wharé was of iron, and at night it was delightful to hear the wild tunes played by the blasts of hail on the stretched metal, the premonitory hint, just a prick or two, the tap of the earliest stones, the pattering that thickened and quickened into a roar, the distinct timbre of larger and more sparsely shaken globules, and the dying fall as the blizzard passed away. I think people at Home miss much when they lose the noise of the storm on the roof, and the ebb and flow of its pour.

Light was admitted by a small window most of whose panes were intact. There were double tiers of wooden bunks, the upper so close to the lower ones that care had to be taken to avoid abrasions; and a man in a nightmare, awaking and stretching his arms, might easily imagine himself struggling in his coffin. Our little table hirpling on its feet and limping at each movement on the uneven floor, was deeply stained with every imaginable mark of sober revelry. The 'chairs,' were a stool, barely long enough to seat two men, and offering, the perpetual inducement of a practical joke that would precipitate one of them on the floor by the sudden rise of the other. The alternative seat was a long box, comfortable when a local knowledge of splinters had been acquired. On the

mantelpiece were odd bits of candle and dry matches left by the good nature and providence of former visitors. Bits of bag, sacking, and ancient underclothes, blocked the spaces along the rafter plates, for there was ventilation from the floor boards, pock-marked with nails, from the ingle-nook, where a couple of boards had rotted away, from the window, from the chimney, and from the uneasy door.

Cobwebs black with soot festooned the roof, and indeed there was a general atmosphere of smoke about our camp. On lines and cross lines, wet and dirty garments drying, gave the place a homely look,—I say dirty,—but oh how different from the filth of streets. Our dirt was clean peat perpetually soaked in heaven's rain, clean sand bolted a thousand times by gales, and clean leaf mould from virgin woods.

On the shelf below the little window, stood, not 'broken tea-cups wisely kept for show,' but tins of pepper, sugar, tea, coffee, etc.; and from projecting nails were hung our mugs and pannikins. From the rafters loaves and bacon were slung in separate flour bags, and, as relics of some by-gone feminine invasion, there yet remained in the wharé a broken pocket mirror, and speared into the wall, a lady's hat pin, upon which after meals, my companion, full fed, used to gaze with a species of rapture of idolatry. Of the tiny oval looking-glass, only a corner remained, and from this fragment most of the silvering had been worn away leaving as background the printed merits of a patent medicine exposed. I had never realised the full depravity of my countenance, until, with a week's growth



Camp at Rakiahua.

of beard, I saw a section of my face in this remaining portion of mirror. I never dared to look again; I seemed to have broken out into a loathsome rash of small type, that might have been, for all I could tell, infectious. Assuredly I never should have been at large at all. I was a danger to the community, a reproach to the perspicuity of the police.*

*It was during this expedition that the inner and more esoteric meaning of washing up was revealed to me, the philosophy of the process. We used to do it turn and turn about and often have I paused to ponder how dirty plates, mugs, knives and forks became clean when washed together in a small tin dish.

It seemed so impossible that by putting soap into hot water the leavings of a meal should disappear, that bacon fat, marmalade, cheese, crumbs, yolk of egg, butter, mustard, tea, sugar, and coffee dregs, mixed in the same brew, should give us the finished product of clean plates, clean knives, clean forks and clean mugs. Lying awake at night I used to worry over it, and began to find myself unable to think of birds for more than twelve or fourteen consecutive hours.

One evening, after we had finished an extra mixed meal, for each of the three of us had his specialty, I asked quite suddenly, "How is it that our washings up make the things clean?"

I shall never forget the answer. "Guthrie-Smith," was the reply, "from the time I was a wee toddling laddie in kilts I determined to work that out, and please God I have." And then I was told everything.

It appears that all food stuffs contain superphosphates in varying quantities. There is superphosphate, for instance, in butter, 3.77, superphosphate in marmalade 1.32, in ordinary sugar 1.86 (a fraction less in colonial refined), superphosphate in bacon, cheese, yolk of egg, and so forth.

All soaps, on the other hand, contain hyperphosphates, but most markedly the common bar soap used throughout the Dominion in washing up. Now it is the nature of phosphates at certain temperatures to fuse.

Then he continued, "When after the plates and knives and mugs are in hot water and the soap impaled on a fork is swished around the basin you may have noticed that quantities of bubbles arise? Well, these bubbles are the gases evolved by the union of the superphosphates and the hyperphosphates, and as they burst, the leavings of the meal, the bacon fat, crumbs, dregs of coffee, etc., pass by a simple chemical process into the air we breathe and once again become hydrogen and oxygen."

I had never known that before. In my school days science was hardly taught. It was an extra.

Round about this wharé and throughout the length of the whole valley, the Fern Birds were as plentiful as about the equally suitable peat flats of Mason Bay, and, with the inborn propensity of mankind to create new species, we fancied we could detect several small differences in the Fern Birds of the two districts. Each of the two breeds, if indeed they prove to be such, is very plentiful, but the differences are slight, and the range, moreover, of the one species overlaps that of the other. Geographically, something may be said for the possibility of two breeds. At no very distant period of time Stewart Island has been divided, and, it may have been this ancient water barrier that has so definitely fixed the range of the Kiwi, to a lesser extent that of the New Zealand Dotterel, and possibly that of the Fern Birds, always most feeble fliers.

The larger of the two chiefly haunted the banks of the Rakiahua, and seemed to be a more active bird and a stronger flier, continuing in the air for sixty or eighty yards, and climbing to the tops of the low trees fringing the river's edge. To me it appeared identical, both in strength of flight and in size, with the birds noticed on the islet Piko-mamaku-iti, lying between Stewart Island and the Bluff. The white markings over the eye seemed to be more distinct, also the pencilling of the breast feathers, and the chirp perhaps louder, and with something of the vibratory tremor produced by a whistle containing a pea.

The Mason Bay species, frequenting the tussock grass and tangle fern, we believed to be a smaller bird, more furtive in habit and with

Male Fern Bird seated on top of female – eggs in act of hatching – Rakiahua

Fern Bird—Rakiahua.

the white streaking and pencilling less well marked.

During the first week of November at Mason Bay McLean got two nests of the latter bird, the one containing a single egg, the other three young birds. Next day the nestlings were found to have been destroyed, the marauder—probably from the situation of the nest, a rat—not even having had the excuse of real hunger, for I found one of the dead nestlings stiff on the herbage below. This nest had been lined mostly with Weka's feathers, but amongst them were a few evidently collected from the Harrier Hawk, the Pukeko, and the alien Goldfinch. There were also one or two tiny tufts of wool,—a substance I had never noticed before in a Fern Bird's nest. The other nest was in a stiff rush bush, embedded in the dead stems of previous seasons' growth. Deep it was, as are all Fern Birds' nests; and in it the little inmate sat, entirely hidden save for the beak pointing skywards, and for the shafts of the long abraded tail, stuck straight up at right angles to the bird's back.

The eggs of the Fern Bird are really beyond imagination lovely, most elegant in shape, frail, of a diaphanous pink spotted with dots of brown, innumerable as stars in clear darkness, freckles on a fair beauty's face, their shell too exquisite indeed for rude, human touch, treasure fit only to lie in a Fairy Princess's palm, to be brushed by her lips, to be lovingly pressed to a bosom smooth and warm as the soft feathers of the mother bird. Both cock and hen added from time to time a feather to the nest. The hen was especially provident in

this way and was quite distracted by the wealth of extra fine specimens I had drawn from the other derelict nest, dry-curled and smoothed, and which at intervals were allowed to float down near the camera.

In its plumage this Fern Bird is most unobtrusive,—browns of a darker tint marking its back and sides, and shading off into paler browns beneath. The cap, or crown, of the male, is of faint chocolate colour, and in this breed the pencilling behind the eye, the merest thread of white.

About a month later I got a nest of the larger Rakiahua breed, and in a situation unique in my experience of the Fern Bird. It was placed about four feet above ground, and was well hidden in a manuka bush—manuka of the Stewart Island type, thick and bushy to the root and in habit quite unlike the more slender plant of the North Island. This thick, wind-clipped shrub, one of a small clump, grew some seven or ten chains from the Rakiahua River. The owners of the nest, even for Fern Birds, were unusually attentive to their duties, contending —almost quarrelling indeed—for the seat of honour on the eggs. We had arrived, in fact, at a time when visitors are least welcome. These eggs were in the very act of being hatched, and if the poor little cock was over-anxious and fussed, as a man and husband, knowing what his feelings must have been, my fullest sympathy went out to him. He was so very anxious to help, and knew so very little how to assist his wife. She, however, must have regarded this anxiety as honourable, for even, when with a caution overdone but still praiseworthy, he

Fern Bird, showing tail shafts—Mason Bay.

Fern Bird's Eggs - Rakiahua.

OTAGO HARBOUR.

To face page 59.

attempted to impart to the eggs his extra warmth, she remained placid. Even when, head to tail, he sat bodily on top of her, she endured him unmoved and still serene.

After the birth of the first chick had happened and the shell had been removed, the male at once busied himself in obtaining supplies. Possibly within five minutes of birth, probably within seven, and certainly under ten minutes, the cock bird had brought, and the chick received, a green caterpillar. Whilst it was being given, I noticed that the hen only momentarily moved aside, remaining on the nest's rim ready at once to re-seat herself. The male immediately flew off for further supplies, and brought back this time a small brownish grub. This, either because the hen bird feared he was over-feeding the new hatched chick, or more probably because this offering was unsuitable to its baby stomach,—mince pie, say, instead of Mellins' food for infants,—the hen bird refused to pass. She sat firm on the nest, and quite a little fencing match occurred between the rival bills of the parents. he resolved to give it, she equally resolved that it should not be given. At length he was overborne, and desisted. The grub was taken from him; and, as if to end all unkindness and to finish the pother, swallowed by the hen herself. Quite a wrong impression would be given of the connubial disputation, if it should be thought that any snatching or pulling about of the grub took place. To me, the cock seemed rather to yield because he was on reflection respecting the judgment of his partner. During the little sparring match the birds were perfectly friendly. I feel sure the hen knew it was but too great anxiety

that made her husband nervous, and easily condoned a fault leaning so much to virtue's side. Of the alternatives hazarded, to account for the rejection of the grub, I believe the latter, that it was unsuitable, is the more likely to be correct.

In the absorption of watching, I put my face too near the birds, and when for an instant both left the nest, the jar of their departure roused the chick. At once he reared his neck erect, opened wide his gape, and when touched by my finger tip was perfectly anxious to swallow it. Certainly, therefore, he was hungry, and had the grub been offered he would have taken it.

During this little domestic episode, and whilst I was watching the details of that Fern Bird's nest and comparing it with a human home under like circumstances, only an utter want of imagination could have failed to remark the essential similarity of situation in the two male animals,—the man and the male Fern Bird, both so entirely out of their true spheres of usefulness, no longer the glories of the universe, but mere sheepish appendages of the female sex.

Without attempting to undervalue the cock's affection for the nestling, I cannot but suspect the motive of his rather ostentatious and pressing gifts of food. The keen desire of the little fellow to nourish the chick was, I fear—in part at least—an effort to re-assert himself and mark the proper domination, for a few hours imperilled, of his sex. Knowing his value to the full as all male birds do, it must have been galling to feel how little he had to do with the late affair, or at any rate, that his share in it had happened so long ago as to have been probably forgotten by the silly old hen.

Fern Bird—Mason Bay

Chapter XV.

THE RIFLEMAN.

ALTHOUGH but a very little bird the Rifleman adds much to the life of the woods with his faint "zee," "zee," "zee," his endlessly repeated wink and twinkle of wing, and his restless search for insect life. The diminutive size of the species is probably of considerable assistance in the struggle of life, for powers of survival and increase depend by no means only on suitable food supplies, recluse habit, number of eggs, or rapidity of growth in the nestling. When, for example, there is a paucity of building sites, the numbers of the breed are limited perforce, and I believe it is largely owing to the number of holes and crannies suitable for nidification, that the Rifleman is so plentiful. Of these small rifts in dry wood, and orifices where the timber, though dead, is sound, there must be a score for each site useful to the Parrakeet and a hundred perhaps for every one suitable for the Kaka.

There are in New Zealand two varieties of Rifleman, differing but slightly in plumage, the one representative of the north, the other of the south, and both seem to breed late in the season. Of the latter, three nests were got by our party

during early December in Stewart Island. Of the former I have found only one nest. It was got by me many years ago late in November, in forest country, and at an elevation of quite 3,000 feet. The nest lay within a splintered sapling, projecting like a bowsprit over a vast jumble of limestone boulders, one of the avalanche slips of that district. The soft core of this bit of timber, had, at the broken end, rotted into dust, or been blown out by gales, and a cavity thus formed, some ten inches in length, rather broader at the opening and narrower within. This hole was completely stuffed up with soft pigeon feathers, only where the four eggs lay was there a just sufficient addition of skeleton leaves, to bind them into form and frame. These eggs were large for the size of the bird, somewhat blunt at the thinner end, and of a very dull white owing perhaps to long incubation.

Of the Stewart Island nests, built not more than a few score feet above sea-level, two were in crannies inaccessible; the third was easier of approach. A totara of the smooth bark species, had been, eighty years ago perhaps, uprooted, and had fallen across one of those suffocated creeks so common in this type of forest land, creeks alternately wasting themselves in ooze and peat, or spreading abroad among dark plantations of ferns, and blocked at every turn by rotted timber, wind-shaken from above. Part of this fallen tree had shot forth tall, upright growths, and was green and flourishing. Ten feet, however, of the projecting butt had for long been dead, and had become sufficiently decayed above to nourish ferns, orchid growths,

Alpine Rifleman.

and even small epiphytic shrubs. Beneath, however, it was still sound, and, where the moulder had fallen off in dust, yet contained a sufficiency of dry wood for the modest wants of the Rifleman. In this hard wood there was a narrow fissure in one part roughly circular, and where probably a small knot had fallen away. The little draughty clefts on either side of it had been blocked with building material, and the rough edges of the knot hole itself, enwrapped with cobwebs and moss. This funnel-like entrance indeed was so bound up with silky mesh and so minute as not a little to resemble the round hole built by spiders, from which they issue stealing upon their prey. It was only by stooping and looking upwards in a cruel breakneck attitude that the webby keyhole could be noticed, and the breast and head of the foremost chick seen within. Whilst feeding the young, the parent bird must have clung to the rough surface of the wood, as a fly clings to the ceiling. The nestlings were supplied with moth, caterpillars, and insects of many kinds. These were collected at no great elevation, for although at certain seasons the Rifleman mounts very high in search of food, the flight-paths of the pair now rearing their brood rarely exceeded a height of 20 or 30 feet. The hen was by far the bolder bird, and it was only whilst we were some little distance away that the cock would nerve himself to carry in supplies. When approaching with food, the birds flew in short stages from shrub to shrub, 'zee, zee, zeeing,' as they came on. The halting place occupied immediately prior to the plunge beneath the bole,—where the birds always for a moment paused, though never for

an instant ceasing to flick their wings,—was a rootlet detached from the peat and swinging loose in air, low and parallel to the log. With an effort that always set the loop aswinging, an upright dart was then made, and a moment later, from the sharper 'zee, zee, zee,' we knew that the act of feeding was in progress.

Owing to the bad light and the rapid exposures required to beat the wing-flicker, all photographs of this little bird failed; and the single illustration is taken from the least bad plate of a most iniquitous lot.

Chapter XVI.

ON ULVA'S ISLE.

IT was during the last days of my first visit to Stewart Island that I got an Auriceps Parrakeet's nest on Ulva and a Kaka's on the mainland.

In the Parrakeet's nest were young birds; in that of the Parrot a brace of much incubated eggs.

I was very keen to know more of both of these species, so, after leaving Stewart Island with my family, and with them spending a fortnight in Westland, I recrossed Foveaux Strait. Knowing from long experience the accidents that happen to nests, I hardly dared to expect that, after the lapse of so many days, both would have remained inviolate. In this doleful conjecture I was not wrong, for signs of disaster thickened as the Parrakeet's nest tree was approached. In a great half-dead rata, a Morepork had established himself since my last visit, and thirty yards farther on, we had evidences of his wicked industry in the widened aperture of the nest. Moss, bark, and clinging polypod had been torn away, and directly beneath the orifice lay a dead chick. There still remained in the nest, one live bird, so terrified at the feel of my finger tips, that I think it must have been

actually touched by the talons of the Owl. When reached by my finger exploring in the dark, this survivor called out in mortal fear.

The breeding chamber of this pair of Parrakeets was about six feet from the ground and possessed two entrances. It was from the lower of these, that by sinking a leg into the hole and groping with his talons, the Morepork had been able to scoop out his victims. The other entrance was twenty feet higher up, and the hen bird, after feeding the youngsters and while still shy of me, would usually run up the perpendicular bole and escape, as it were, by the chimney.

This devastated nest, however, was never photographed, for, whilst I was blocking the lower hole to exclude the Morepork from any further outrage, Leask sang out that he had found another breeding hole. It was only a few yards away, and next day a third was discovered.

These nests were within twenty or thirty yards of one another, the first in a kamahi, those discovered later in huge many branched ironwoods. I do not remember any attempt at improvement of the small natural hollows, which need not moreover, possess a greater depth of wood refuse, than will suffice to cushion the eggs. The young Parrakeets' staple shaped droppings are perfectly dry and woody; and even with a large family in so limited a space the nest is sweet, and fresh, and odourless.

I had obtained leave to cut all necessary trees; and with the assistance of Leask and Gilfillan, my companions of this trip, a most substantial stage was soon in progress. The uprights and cross pieces were of ironwood, the stage and screen of fern tree stems, and there, 'Timotheus

Hen Auriceps Parrakeet.

placed on high amid the tuneful choir,' I spent every hour of light for many days.

Some birds are more delightful to watch than others, and I was never more pleased with myself than during this week on Ulva. The weather was perfect. Through the tree tops I could get glimpses of the sea and hear faintly the pulsations of the engined fishing craft. The light and warmth, moreover, of the new-made space, proved an attraction to every species on the islet. Bell-birds were thick about me, choirs of them singing on, and within a few yards of the stage, and tolling delightfully in chorus. Tuis were there, Fantails, Tits, and Warblers.

These species had come for light and warmth alone, but others there were besides myself, who took a genuine interest in the nest and family within the ironwood. On three occasions a splendid male of the red-headed species of Parrakeet called, and peered into the dark hole, raising from the nine children within, a great clamour; but whether of welcome or remonstrance I could not tell; at any rate not more than remonstrance, for the Auriceps is the most gentle, harmless, kindly little fellow.

This habit of calling seemed to be quite a marked feature in the manners of the Auriceps race also. Not infrequently, little parties of strangers of that breed would visit the tree, and chatter with each other and the Parrakeet hen. Whilst thus either by custom or perforce, entertaining or perhaps rather enduring the civilities of her friends, sometimes the hen mother's crest would be slightly raised, and her tail feathers slightly spread, as if not altogether pleased to have so many folk near her babes.

The female bird, I think, took entire charge of the feeding department, and I believe the supplies consisted of the tender tips of certain shrubs—coprosmas, I think—and their embryo blossoms. Once, at any rate, I found an infinitesimal particle of stuff of this sort dropped on the bark, and close below the nest, and which could only have fallen from the bird's bill. Two minutes was about the average time taken by the hen in feeding her nestlings, and I think it quite possible that each of the nine got its share at every recurring visit of the parent bird.

Little Parrakeets never cease whilst absorbing their supplies, to make delighted little guzzling sounds, and I always imagined I could tell by the different pitch of the notes, that on different occasions larger or smaller chicks were being fed. I am sure no struggling for precedence ever took place in that crammed nursery. Each, nearly naked or almost fully fledged, climbed up as bidden, a little out of the nest bottom. Indeed when the hen Parrakeet had become very tame, I was permitted to climb above the hole and peer into the nest whilst the meal was in progress. There I could always distinguish four or five little grey bills and four or five little open mouths, and admire the household's order and the obedience of its inmates. After each chick in its turn was fed, the hen for a few minutes would withdraw her head or sometimes half her body from the hole, and proceed with a sort of munching process. She would then again lean over the brink of the hole and nod into it with violent gesticulations—exactly as if with imperious haste another chick was being sum-

moned to feed. Really, I suppose, she was in some way jerking up the masticated greens into her bill, for down would go her head again, and up would rise a joyful noise unto the Lord, the low chirruping squeal of the happy chick.

The mother does not actually give the food; rather, I think, the nestlings are encouraged to help themselves from her bill, she supplying it in proper form and quality. At any rate weeks later, though quite willing to feed themselves from the human mouth, they would gaze at food offered them otherwise, with quite an owlish air of wonder. Only once I noticed the hen enter the nest. She then remained in the hole for about five minutes, and when out again in the open, gave vent to the long, quick, strangulated cry, "Riki-tik-tik-tik-tik," and was immediately answered by another bird, hidden from me in the forest greenery. Often, too, after feeding of the brood was over, she would rest in the nest's vicinity, and before flying off would call out several times, "Twaak, twaak."

About mid-day both parent birds, fluffed out and sleepy, enjoyed their noon-tide siesta, in close proximity to the family. Had the nestlings been younger, no doubt this hen would have been more in the nest, but even then, it is probable that a Parrakeet mother spends comparatively little time on her young. The eggs are laid intermittently, so that after the earliest born chicks can give forth the heat necessary to hatch those eggs that remain, the hen's whole time may be devoted to feeding the brood.

When about to leave the island I opened the nest, in order to carry off a couple of pair, and in so doing had an opportunity of noticing the

great difference in the ages of the nine nestlings. One of them flew with perfect ease, and indeed thus escaped, whilst the quills of another had barely begun to sprout.

One broad branch of a somewhat flattish shape, several feet to one side of the nesting hole, slightly higher, and quite out of the hen's line of flight, I used to look upon as the courting ground of the pair. About two feet of its surface were perfectly smooth and worn with traffic. No scale of bark or scrap of moss remained. Often whilst I watched and listened, mysterious sounds would emanate from the hole, sometimes the beginnings of uncertain song, the numbers broken and hesitant, sometimes a noise of scuffling and fluttering, bark-scratching and shaking, as if the whole brood were playing at "Musical Chairs" or "General Post."*

During our early intercourse and whilst the hen still hesitated to feed her nestlings before my gaze, I believe that like the carnivorous King-fisher or Falcon, she, too, absorbed the undelivered food and went off to gather a fresh cropful. At any rate after being baulked for more than a few minutes, she would altogether leave the vicinity, and remain absent for about the average time taken normally to provide new supplies.

My photographs turned out to be deplorably bad. From the situation of the nest I could

*I used to think, too, of that bed, where in a London slum tenement, and packed like sardines, a whole poor family slept, father, mother, boys, and girls.

"But how," enquiry was made, "do you manage if you want to move at night?"

"When Pa says 'turn' we all turn," was the reply; and perhaps likewise when the eldest Parrakeet said "turn" all its younger brothers and sisters also turned.

Auriceps Parrakeet about to enter nest.

never get light on the bird, always the side nearest the lens was in shadow. The Parrakeet, too, is a most lively, restless bird; and perhaps the coloration of the feathers and their gloss may also be urged in excuse or extenuation.

During a large part of the year the Parrakeet tribe are pre-eminently birds of the tree tops. In spring, however, they obtain some portion of their food from the earth, and can then be approached closely, and seem to be gently scraping the ground, standing on one foot and raking with the other—an attitude singularly inappropriate both to the spirit and figure of the bird. Whilst thus occupied it seems to be deeply absorbed, and is probably collecting some sort of animal food, maybe the larvae or eggs of some cicada or beetle. Then, and during the nesting season he forsakes his heights; otherwise his merry span of life is passed between the green spread of tree tops and heaven's blue—the greens and blues he borrows for his plumes. From their gnarled ironwood, in March, three little Parrakeets were drawn half fledged, and pending my departure, were entertained by the kind hostess who afterwards befriended "Dick," the infant Kiwi.

They were reared on oatmeal slightly moistened in the mouth, warm therefore, and in its most wholesome form. They fed well and proved moreover excellent travellers, crossing Foveaux Strait, and enduring a long railway journey.

Until their ultimate destination, Tutira, was reached, they were broken to freedom by flight about the rooms of South Canterbury relatives with whom I stayed. The birds learned to return to their cage for lettuce leaves, for the

ripened heads of sow thistle, for the pips of apples and pears. Moistened meal was their staple food, and was still taken from the mouth, the nestlings, as always, pouring forth ceaseless thanksgivings, their long rollicking graces rising to a perfect ecstasy of gratitude at an extra tasty mouthful. Some skill is required in the nourishment of the small restless birds.

First of all the oatmeal should be poured in a narrow stream on to the palm where it will form a small loose cone or mound. The hat should always be removed, and if the performer is of a nervous temperament, it is recommended that the coat also should be taken off. The head should be lowered and stretched forth until nearly at right angles to the trunk, and the little hill of meal raised to within four inches of the face. It should be then, with a single smart gesture thrown upwards against the roof of the widely distended mouth.

To practised feeders, or those born with natural aptitude, one gulp is sufficient, but beginners often fail to retain the whole amount and have shamefacedly to lick up the residue with their tongues, as I have seen ant-eaters, in picture books, absorb their living prey. Care should be taken never to inhale the breath lest coughing should supervene, and a dry Sahara of meal be blown abroad. The artist can in this way, that is when in form and on his day, produce at once the exact amount and in the proper condition of dampness.* The stuff should be

*"Feeding the Parrakeet." New Christmas Game—elegant, refined—for either Grown-ups or young people. Paper bird uncoloured, rules, and list of old-fashioned forfeits for choking, sneezing, or coughing, 1/9, posted to any part of the Dominion. Cloth bird, coloured, red head, dye guaranteed, 2/11¼. Whitcombe and Tombs, Wellington, and branches throughout the Dominion.

fed to the nestlings beginning as a masticated poultice, and ending as a granulated dribble. The artist at his work will always endeavour to give the whole process an air of reality—the woodland touch—allowing the little fellows to climb from his boots upwards over his stockings and tweeds. I always hoped that rough Harris cloth might be a substitute for ironwood bark.

Each Parrakeet in turn was manipulated on to the wrist and fed on the moistened paste, absorbing it with ceaseless little noises of delight and gratitude, and these always rising to a perfect storm of happy gurgling notes when the dribble was reached. At Tutira, owing to bad weather, the birds were for a day or two confined to my writing room, and as was their custom in strange quarters, the curtain pole and curtains were at once inspected. These articles of furniture always attracted immediate attention, and up and down the drapery the little creatures would climb, peering into the folds and clinging to the cloth.

Polished woodwork, on the other hand, was abhorrent to them, and especially tables, upon which they moved very gingerly like beginners on skates, and with wide-spread legs. Indeed after a while the birds rarely alighted on the table, or, if an exception was made, did so cautiously, and with wings half open so as to preclude the possibility of sliding on their shiny toes.

I may mention that from the day the trio came into my possession, they had been, for ulterior purposes, most thoroughly broken to the cage and made to look upon it as the place where pips, bits of apples, and all sorts of small delicacies were to be expected. Sometimes the door would

be purposely shut, and then the trio would be seen as eager to gain admittance as most birds are to seek escape. Long before arrival at Tutira, therefore, they were accustomed to come to call, to look upon a proffered wrist as an invitation to feed, and to regard their cage as a home to be loved.

If not given immediate attention, they would, when hungry, fly on to my back, nibble my collar, and gently tweak the skin of my neck. They were never on any occasion handled, and never therefore associated us with the most terrible of fears to a free creature, the loss of liberty.

For one day before opening its door, the cage was hung on a tree on the lawn and the Parrakeets thus in some degree accustomed to their new surroundings. Next morning was warm and bright, and before the usual early meal, "Hans," the eldest and largest, was encouraged to hop on to my wrist and liberated in the tree. The caged couple were then partially fed, the outsider remaining hungry and therefore disinclined to go far. He was, after a little, replaced in the cage, and another given freedom. Thus in turn each of the three obtained full liberty, yet freedom, hardly more sweet than food and home and comradeship.

"Hans" was the first on whom dawned the possibilities of unlimited space. To the big willow, a score of yards distant, he flew, and there remained for some time chattering to himself and his mates, exploring the bark and viewing the tree tops, the blue lake and the bluer skies.

Very soon even these precautions were dispensed with, the trio merely taken out, in their cage, the door opened, and until dinnertime the birds not again expected to appear. Meal hours

Parrakeets eating almonds.

were seven, twelve, and four. In the evening they were carried back, seated free on shoulder or wrist, and busy in the enjoyment of almond, walnut or sunflower seed. After a few days, caging at any time was discontinued, each night before going to bed I would open the top of my writing room window so that at dawn the birds could fly forth.

In the early mornings, when I crossed the lawn to visit the various meteorological instruments, the little fellows would flash down from gum or willow, follow me up, and as I walked, fasten themselves to my tweeds and cling like bats or burrs.

Even our tamed Native Pigeons were not so fascinating. In their grass greens, their blues, their crimson braided yellow caps, the Parrakeets were equally beautiful. Their gentle habits and diminutive size were a constant appeal for protection and care. It was delightful to be kind to them, for we were allowed such frank participation in their happiness. To wake in the morning and think of their welcome was to be in love.

There was no discord in the cage or in the rooms about which they used to fly. Once only in my presence was there any manifestation of anger exhibited, and now that the bird affronted is gone and I can in no way again show that my breach of etiquette was involuntary, its memory is the more painful. At the time, of course, apology was offered and reparation made in every possible way, but, in justice to myself, how, I ask, was it possible to foresee, that the presentation of a large black fuchsia berry from a garden variety, would suddenly make the bird furious and cause him

to bound threateningly at my hand. Mine, I suppose, was some such involuntary fault as in a moment, on a new found land, breaks the bond of savage and mariner. The white man transgresses some unknown code, and in an instant the feast becomes a fray.

Our Parrakeets, alas, however, were not to remain long with us. Within a fortnight of their arrival "Hans" and "Leask" on one occasion stopped out all night. "Leask" was back at seven and "Hans" returned later. There had been heavy cold rain and both birds were very hungry. A week later "Hans" again remained away. He did not return the following day or the next. "Baby" and "Leask" on the latter were also out. Next morning, however, all three came to be fed, and this was our last glimpse of the two males.

"Leask" returned early the following morning, and it was curious during that whole day and the succeeding days, to watch her distrait air, and note how constantly she was listening for her friends. For a month longer she remained, and as she was only allowed to fly in fine weather, and brought home, free of course, earlier in the afternoon, she and I became great allies.

On the sad days, when forced to remain indoors, most of her time was spent gazing out of the window, perhaps hoping like a child that the rain would only cease, and that she could get out to play. Her habit was, each evening, after being walked home on shoulder or wrist, to visit at once the curtain pole where her two lost comrades had slept with her, then sidling along its length once or twice, she would preen her feathers, and at last creep down the curtains

to a particular loop made by the contraction of their rings.

On dark afternoons she would turn in as early as three o'clock, and her preparations for the night usually took some considerable time. I could see the drapery shake, and hear her stir and fidget in the effort to discover the most comfortable position, but, once settled, my recollections are that she was perfectly quiet. Always during these proceedings, our habit was at intervals to exchange greetings, and it was curious to notice the little voice getting more and more sleepy, until at last it was only by an effort she replied.

Often by me this prolongation of our talk was done to tease, but her replies were suave and similar in tone, to the last, only more and more short. When visited late at night, she would very gravely open her mouth, and without moving, gaze at me. She then preferred not to talk—she may not have thought it proper—but would, if persistently addressed, briefly and sleepily reply, perhaps as the easiest way of ridding herself of me. At first I had thought this habit of early roosting must be unusual, but after several times thoroughly awakening the bird and causing her to fly, I found she at once returned to her curtain loop.

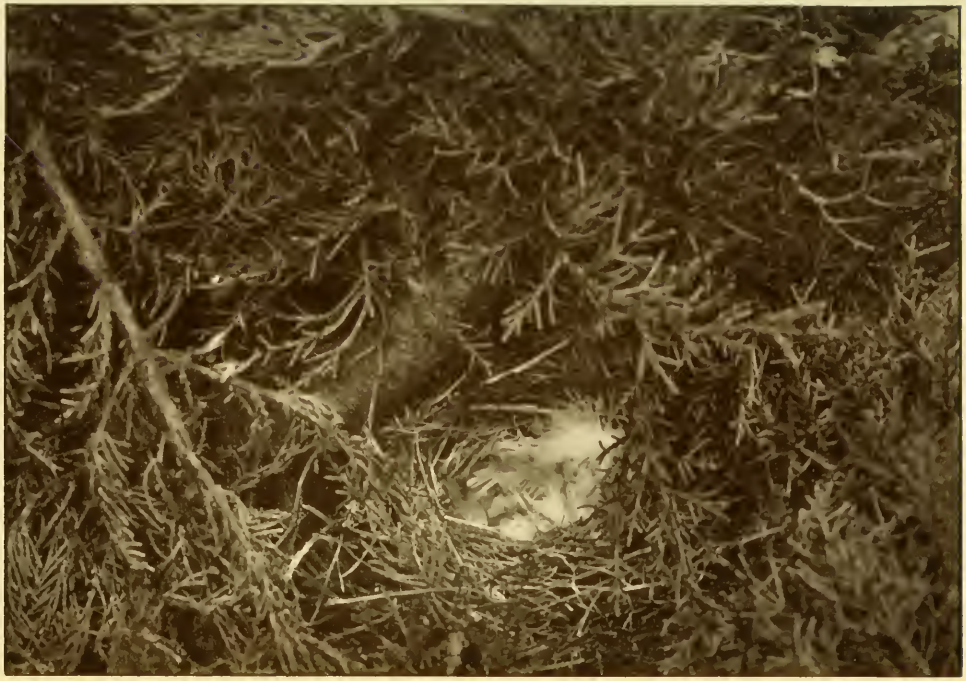
She too disappeared with a change from fine to wild weather. Perhaps some instinct bade these Parrakeets change quarters before the approaching storm. In no way at any rate were the birds becoming wilder or more shy of us. They either lost themselves, or were killed when roosting, by the little Owls. I have always supported the latter theory—they couldn't have wanted to leave Tutira.

Chapter XVII.

THE BELL-BIRD.

IT is inevitable that the native birds of New Zealand must suffer in the immediate future a still further decrease in their numbers. Already, as has been pointed out, the vast proportion of the warmer and more fertile lands have been settled, and the indigenous species expelled therefrom. For many years, however, our native birds have enjoyed a respite owing to the dilatory policy adopted in regard to the Native Lands of the North Island. This cannot continue, and within a short period these blocks too will be thrown open to settlement. Within twenty-five years, perhaps, only the most inaccessible and barren open lands, the forests valueless for timber, and growing on soils worthless for farming purposes, and the low-lying swamp lands, will remain. With an area of wilderness thus restricted, the food supply will, both in quality and quantity, be curtailed in a still greater degree.

Even under these adverse conditions, however, something can be done, and the planting of trees and shrubs capable of yielding nectar and berries would well repay the labour involved.



Nest and Eggs of Bell Bird

Gums that blossom in mid-winter, fuchsias, and many other aliens could easily be grown in the mild climate of Stewart Island. As on the west coast of Scotland kowhai, cabbage tree, flax, matipo, and manuka flourish with luxuriance, so along the ocean edge of our Westland National Park and where the warmth of the sea allows no frost, many early flowering foreign plants could be established.*

For suitable food birds will travel considerable distances, and in search of it, will pass over open stretches of treeless pasture lands. In Napier itself the Tuis that in spring feed on the nectar of the surviving kowhai trees, must fly one or two miles at least. About Gisborne, where in winter and early spring the Tui and Kaka visit the blossoming eucalypts, these birds must traverse eight or ten miles of open country, and I never was in Ulva, that delightful islet in Paterson Inlet, without finding Mr. Trail's garden fuchsias alive with Bell-birds.

The Bell-bird indeed is a species in disposition most friendly to man, and with a little encouragement would become a charming addition to every country garden. On the nest it is most extraordinarily fearless of man, and the sites chosen are often within a few yards of his dwellings.

During the spring of 1911, of two nests under observation in Stewart Island, one was in a garden hedge between two houses, and within a few yards of each. The other was actually in a deserted out-house—a site it might have been

*Great care would, of course, have to be taken in no way to modify or neutralise what is one of the features of the scenery of the Sounds, the purely New Zealand character of its vegetation.

thought that only a New Zealand, or a Home, Robin would have selected. To attain her nest this Bell-bird had to fly in by the crazy broken door. There, beneath the sagging roof of totara bark, she sat looking into a daisy tree that grew without.

The nest from which the photographs are taken, was built on the square clipped top of one of those giant macrocarp hedges so common in New Zealand.

Never have I known a more devoted sitter than this particular hen Bell-bird. The Fantail and Fern Bird are amenable, but, for at least an hour or two and often for much longer, even these species vacate their nests at very near approach. Never before had I known a wild bird on first acquaintance to permit, without flinching, the removal of the twigs, etc., that so often obstruct the lens. In the case of this nest several shoots had thus to be snipped off and moved aside, and one of them, of quite considerable girth, projected itself within an inch of the bird's bill. Very gently and tenderly was this twig grasped, very cautiously the jaws of the strong steel scissors bit into the yielding bark, very gradually the twig bent over, till it lay dissevered and leaning on one of its lateral shoots; lastly with hardly the least rustle and hardly the least jerk back of greenery intertwined, and slowly as a worm drags into its hole a leaf, the cutting was removed by me and the lens' vision cleared. During the performance of this delicate operation, in the little mother's eyes only, was there movement, and only life in the beating heart that shook her sides. I could see the feathers rise and fall stirred by its pulsation.

Except for these almost invisible tokens of great fear and great strain, through those long minutes of suspense she had sat unmoved.

The Bell-bird's eggs are pinkish-white marked with blotches of richest brown; the nest, too, is a beautiful structure firmly set in position and lined with many feathers large, lovely and soft, the Pigeon's purples and bronze, the Kaka's reds and browns. Of the male, by far the larger and handsomer bird of the pair, but little was seen. His advent was unobtrusive, and the duration of each peep of his consort limited to a few seconds. Twice only he came whilst I was on the hedge top, but in palliation of this seeming coolness, it must be remembered, that during the nesting season, a bird's frequent return to one spot, must arouse the malignant interest of every marauder in the neighbourhood, and provide a clue as to the whereabouts of the brooding bird.

Even with all his caution and in spite, too, of the tar, smeared fresh on the base of the hedge trees, rats discovered the nest, and where a fortnight later little Bell-birds should have been only broken shell remained.

Both male and female Bell-bird were, I noticed, wonderfully deft and agile in threading the intricacies of the hedge, working their way through its stiff interior with something of the Fern Bird's sinuous ease.

The Bell-bird has several points of resemblance to its near relative, the Tui. It delights, as does the Tui, to sing from some tree on a clearing's edge and thence pour forth its music to the light and the wide sky. Again,

like the Tui, in spring time and when mating, pairs can be noticed flying swiftly together one above the other, separated only by a few inches. In these remarkable flights the upper bird manages to duplicate and follow exactly each slightest undulation, inclination, drop, or rise of the lower. To accomplish this at full speed and dashing through the branched heights and tangle of the underwood, without the deviation by a hair's breadth of the space between the pair, has always seemed to me to be one of the most extraordinary efforts of flight.

Lastly, the Bell-bird, too, is an excellent mimic,—a better imitator of other birds than even the Tui. Perched on a tree above a swamp near Mason Bay I watched one giving a fine rendering of the mellow chirp of a Fern Bird; and on Ulva I have been again and again deceived by its imitation of a Parrakeet's quick chattering note—a note in its commencement a little like that of the common house Sparrow. The dawn chorus of this classic bird, choired by innumerable throats, and so extolled by early travellers, I have never had the good fortune to hear. Indeed, although the numbers of the Bell-bird may appear to those who have not known the past, to be still considerable, yet the volume of sound listened to by Cook and his mariners, can never perhaps again be heard in New Zealand. The tolling-note, however, cannot be designated by any other appellation, and is unmistakable. I have heard it most clearly when in autumn watching Parrakeets, and when half a dozen Bell-birds have come up to the stage attracted by the opening in the bush and the warmth and

Hen Bell Bird on nest.

light admitted. The song of these musical visitors always ended in a tolling chorus continued for some little while. There is also a silvery "tinkle" note, which again, alone, would fitly entitle the species to its name. Many of the Bell-bird's notes and fragments must be extremely like those of the Tui, for on Tutira where the Bell-bird is extremely rare—I have seen but a single specimen in thirty years,—I have noticed a friend who intimately knew both birds by sight, listening to the Tui and quite confidently affirming the notes heard to be those of the Bell-bird.

Each species, doubtless, has distinctive notes, but it may be that others are so slightly differentiated, that only listeners gifted with the very finest of musical ears, and thoroughly acquainted with the two species, in forests where both are abundant, can speak with authority. Each species, it must be remembered, is an excellent mimic, and who can say whether often the Bell-bird may not have temporarily picked up the Tui's note, or the latter those of the Bell-bird. Birds have so many notes, and some of them so rarely in use, that all sorts of errors are apt to occur in this department of observation. I can, moreover, imagine a mistake that would vitiate the listener's whole conclusions and which might happen in a very simple way; he would distinguish the two birds on the same tree and even continue to hold both in view; but a slight movement and the intervention of a few leaves might temporarily obscure the Bell-bird's head, whilst the Tui on a bare branch and fully exposed would be pouring forth one of its melodies inaudible, its shining throat throbbing

in wild wood ecstasy. The notes would inevitably, yet mistakably be credited to the Tui.

The Bell-bird survives in thousands still in the Stewart Island woods, and may be found according to the season and food supply, from sea line to the moor-land, and to this bird have I often, during my wanderings in the woods, owed much of pleasure and of interest. Once, for instance, I had just landed on the wooded shores of an ocean islet when a Bell-bird flew down and began within three feet of me to pour forth its song. It fluffed out its feathers, shook itself for a moment, carefully inspected me, and then hopped off.

Another time I thought I got a glimpse of the manner in which birds can, without call or song, convey their meaning to one another. It was in late November; all day the rain had been falling straight like strings, on to the cold grey seas and islands veiled and dim. Then gradually the sun shone out, absorbing the thinning vapours, and doubly welcome after the dark hours. Everywhere rain drops shone on the branches and ferns. There were clean-washed skies above and a shining, dripping earth below. A splendour of freshness was in the air, and the woods, silent all day, broke into song. Across a wide opening in the forest, a pair of Bell-birds passed swiftly and low to the ground. In full flight they dropped, or rather fell, so sudden was their stop, into a clump of fern, shaking the stretched drops as they did so from the tall, uncurling fronds. On the ground they exchanged a rapid glance or two, and, as in a duel many quick bill thrusts and parryings were

passed between the eager pair. Then again their interrupted flight was resumed, the male rising first, the hen for a moment lingering and then appearing with a twig which she carried up to an old sloping orchid-hung rimu. There it was deposited, and she followed in the wake of the male. That stick was no more intended for use than the pine was intended for a nesting tree; at the dictate of some prompting,—perhaps as a reply, it had been gathered. The one bird had suggested and the other understood.

I feel sure myself, though this lamentably inadequate description, I know, can hardly picture the little flashlight scene to the reader, that thoughts of nesting had in that moment passed between the pair; that even as I watched, and wonderful it seemed to me, a new thought had been born to them and awoke to life. I had witnessed the birth, and knew that it quickened in warmth of spring, fresh woods, and fragrance of wet leaves. I was the more assured of this perhaps, from observation, some weeks previously, of a mated pair of Black and Pied Fantail. They, too, seemed to be able to confer without note or call, and would ever and anon, ceasing their hunt for flies in the vicinity, join forces and whirl aloft in close companionship, fluttering, like Humming Birds are represented to do before a tropical bloom, or as the Tui before a manuka bush when collecting twiggy branchlets for his nest. There, before the selected spot,—later we got the nest, but pulled and torn—they would for long flutter, as if in examination of the basis of their future home.

That we can still watch the Bell-bird's lively habits of flight, still listen to its song, still

delight in its attachment to gardens and nectar-bearing blossoms, and still observe its Robin-like trust during the breeding months, in the friendship of man, is owing greatly to the Weka's vigilance.

By a stricter protection of the latter bird, and by the planting of suitable alien shrubs, I am convinced the numbers of our Bell-birds could be largely increased.

I think further, that after the cares of family life had ceased, Bell-birds, like Tuis, would travel miles for suitable food; and that gardens even at considerable distances from any of our large forest reserves, would be thronged with these small songsters.

Chapter XVIII.

THE WEKA.

RATS are the worst enemies of our birds; and perhaps the bush, or tree rat is even more destructive than his grey relative. The former is really the old English black rat, and all the skins taken by me from specimens shot or trapped in the bush, were pronounced by the British Museum authorities to belong to this breed.

The black rat's domicile in outward form is not unlike the untidy structure of a house Sparrow; and when his quarters lie in farming districts, the nests are conspicuous, high on tall hedges of English hawthorn and African box-thorn. In the bush, they may be found in masses of lawyer, clumps of black vine, thickets of supple-jack and dense shrubberies of tutu. I have seen them also built just like an English Wren's nest into the fibry rootlets of an over-blown tree, or fastened into the clinging rata that often ivies the face of a limestone cliff. Most rarely they are to be found in clefts of trees or as burrows in steep, dry banks. When it is further remembered that the black rat will also build in the dwellings of man, it will be seen how catholic are the tastes of the brute, and how adaptable his habits. Within the rough and rude exterior of his nest extends an elongated

dome, tidy and warm, and usually built and lined with the one material. Oftenest the leaves of the tutu or native bramble are worked in as scales or shingles, and so made to curve and overlap one another as to produce a rainproof whole. It is, I believe exceptional to find two materials used, but I have got a nest built of 'lawyer,' and lined with the shredded blankety leaves of the tall yellow-blossomed alien mullein. Although this rat will on occasion take up his quarters in town and build in men's houses, it is the forest that knows him best. He is the harmless frequenter of every bushman's camp; for, where the grey rat will in a night rip and tear a flour bag to pieces, the black rat will behave more like a mouse, and nibble rather than rend and waste.

On each of our mainland camps on Stewart Island, and also on one of our islet camps, we were visited by one or two of these rats, and the damage done by them was of the smallest. But although it is comparatively harmless to man and his property, it is the black rat that threatens the extinction of many of our forest birds. Even the weasels and stoats, I believe, do less harm, for, though more blood-thirsty and wanton in their hunting, their numbers are insignificant compared with those of the rat; they get, throughout the colony, the credit of all damage done,—often, I think, because the result of their work is more apparent. A rat will devour his prey whereas a stoat or weasel will, after sucking the victim's blood, proceed on his way. Only those who see much of our bird life can appreciate the injury done in forest lands by this black rat.

Stewart Island Weka stealing handkerchief.

The grey species works, in its own field, an equal havoc. Whilst searching for Bittern, Shoveller, and Rail on the mud-flats and lagoons of Hawke's Bay, all outlying nests of the two last named were found with eggs broken and sucked. The nests with whole eggs —and they were few and far between—were always got near the cottages built on the dry edges of these flat lands. The rats, in fact, were so numerous, that the presence of man was a protection to the birds, and his cats and dogs an actual boon, and nothing can more fully express the havoc wrought than this statement of fact. About these lagoons and mud-flats perfect armies of rats seemed to have been trampling, and everywhere, in addition to ruined eggs, broken shell-fish bore witness to their omnivorous appetite. The marvel, indeed, to me, was how, for one season, even, any birds whatsoever could continue to exist. Again in a part of Stewart Island where the Wekas have been killed, I have seen the eggs of a colony of Terns entirely destroyed in a single night; and on rat-haunted islands also, in that region, have, hour after hour, got only nests plundered and containing broken shell.

After long experience I am convinced that at Tutira, the two species of rat do more damage to my local avifauna, than shooting, fires, dogs, cats, weasels, and birds of prey combined. It is not fair shooting that is making our Duck, Pukeko, and other game so scarce. It is, at least to a considerable extent, because the country is over-run by rats. Even yet, however, if we but choose to do so, not only the species known to be in danger but also

several believed to be extinct, or almost extinct, can be saved. We shall do this good work most cheaply and most efficiently, by giving every assistance to our native keeper, forest ranger, and inspector-general of nuisances,—the Weka.

The Weka is a most exquisitely inquisitive bird, and anything new in the forest must be inspected by him, not once or twice or thrice, but thoroughly, and again, and again, and again. There is something, in truth, quite extraordinary and abnormal in the delight of this bird in exploration, and the gratification of curiosity seems to be hardly less a part of his life than the exercise of the functions that bid him move, and mate, and feed himself. Curiosity, indeed, is not the correct word. His is rather a passion for fullest enquiry and investigation. Holes and burrows cannot—it is impossible—under any conditions,—under any conceivable circumstances—be too often visited.

I remember a Kiwi's breeding burrow, vacated, and with fragments of the pale green egg still lying amongst the feathers and ferns of which the nest had been composed. This lining had perhaps for a day or so been thus exposed, and had no doubt been pulled out by the Wekas themselves. Yet even then their passion for investigation was unallayed. The hole was so often entered by first one and then another hen Weka—I think the two of them were sharing a family of chicks—that at last I began to think, against all likelihood and all experience, that these birds must in some way be going to use the burrow for themselves. One of them would arrive, perhaps for the tenth time within an hour, unwearied still in

her expectancy and with an abiding air of hopeful eagerness. She would then for a moment pause with the contemplative air the breed can so well assume, and then slowly flicking her tail descend into the depths. Thence, after a moment or two, she would re-appear and again carefully turn over the debris of the Kiwi's nest, and apparently be, really and truly this time, about to leave the spot. She would saunter off at first with some determination, then the steps would become less resolute, then she would pause, and you became aware she was a lost woman. She would re-assume that thoughtful air, then quite briskly and, as if the happy thought of looking into that hole had suddenly struck her for positively the first time, would re-enter it.

On another occasion, in another part of Stewart Island, I was watching a pair of Kaka whose young lay in the bole of a kamahi. Into this trunk there were three entrances by which the old bird could pass, and one of them happened to be almost level with the forest floor. As I have related, the smallest alterations in the bush are interesting to the Weka; and the trees fallen and the undergrowth cleared away for the sake of more light had, of course, attracted several of them to the spot. By these birds it was discovered that nestlings, alive, apparently unprotected, and nearly quite naked, were to be viewed at the lowermost hole. In fact, until the female Kaka herself returned to the vicinity, not all the sticks thrown, not even one of the poets hurled in extremity, could scare the marauders off, and twice, when a Weka entered the hollow of the tree, I was in great

anxiety for my nestlings' lives. Many birds do evil actions, as for example the Shags of Kane-te-toe, but I think they sin rather from a low ideal of conduct. The Weka has eaten of the fruit of the Tree of Knowledge of Good and Evil, and in consequence, no bird bears a more guilty conscience. There is in him an eternal readiness for flight. He knows that half his life has been spent in rapine and plunder, and that punishment ever dogs his heels. In perfection he illustrates the text which tells how 'the wicked flee when no man pursueth.' Even as I leaped from the stage he was gone, rushing across the open, with lightning speed, wings spread, screaming aloud,—an image of terror; then safe again in the smallest fraction of time —behind a stump, a fern frond, a shadow, anything,—he had become transformed; and my eyes fell, not on a terrified, guilty bird flying for dear life after the attempted perpetration of a crime, but on the quietest and most sober of brown birds, very leisurely and very deliberately flicking his tail, and very slowly sauntering away as if nothing in life really mattered very much, that there was no such thing as haste and that "not to desire or admire—if a bird could but learn it—were more than to walk all day like the sultan of old in a garden of spice."*

The photograph facing page 150 shows a Weka in the very act of theft. I had disturbed from

*It was here the first inkling of the Weka or Ocydrome skirt—*Ocydromus*—dawned on me, and although the invention may at first appear to be foreign to the subject of bird life, there is in truth a threefold connection between the topics.—The birth of each new idea is the result of the union of older conceptions and I make no apology for the few remarks explanatory of the process. They will serve to show to ordinary people the inventor at his task.—All my life I have watched the Weka, and marked the

its nest a Yellow-eyed Penguin, in order to obtain a photograph of the bird in an upright position as it hopped back to its eggs. No sooner, however, were the contents of the nest exposed, than they were noticed by the ubiquitous Weka, and a sort of triangular engagement took place between the three of us. I myself at the lens stood about twelve paces away from the nest; at an equal distance from me and the lens, but only a few feet from the nest, stood

unceasing manner in which the tail is depressed and raised, and this alternative drop and elevation has always appeared to me like a toy-shop contrivance, and as if it must be caused by mechanism concealed in the creature's body.

Perhaps this observation and the reflections consequent thereon may have been the earliest of the several thought-factors in my invention. A second was the knowledge of the interior arrangements of cameras, and especially knowledge of the contrivances by which their shutters work. The third factor was an anatomical acquaintance with the ankle of man—*Homo sapiens*—and the perusal of the fact so widely diffused by the illustrated papers that the female of the race was bent on its exhibition.

If this preamble has led readers to anticipate anything startling I fear disappointment will be felt.

The Oeydrome skirt is simply a collapsible garment, a wrinkler, the main idea of which has been adapted from the roller-blind principle of certain field cameras.

The Oeydrome will give leg exposures to any height desired, and up to the thousandth part of a second. It can be set at 'time' also and worked by ordinary pressure of button, or if so desired by bulb or Antinous release concealed in the muff.

To meet all requirements, these skirts are of two designs, 'kneeers' and 'neckers,' the former limited in its rise; the latter if required can be made completely telescopic and thus set at 'time' in no small degree resembles the ordinary umbrella of commerce blown inside out.

The 'necker,' however, should never be used in crowded thoroughfares. Up to the present time I have found it impossible quite to silence the burr of the 'rise' mechanism, and that and the strange eclipse of the human head scares country horses. The 'necker' makes them restive; they can't stand it.

As far as I can recall my mental condition at the exact moment of invention, it was not one of pure personal pride, but rather delight and amazement that New Zealand should again be leading the way. 'Civis Romanus sum' was the predominant feeling, and the recollection that this far distant strip of land had contributed to the Boer war a larger proportion of men than any of the other territories that make up the Empire, that ours was the first great

on one side the stolid Penguin, whilst on the other hovered the Weka light infantry. Several times the eggs were within an ace of being struck and borne off, and the Weka would certainly have scored, for our gesticulations, hissings, and even the sticks and stones hurled, were at least as terrifying to the innocent Penguin. In conclave then we decided to trick the Weka, and photograph him in the act of theft. The pair of eggs was therefore removed

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battleship built for a navy overseas, that our legislation was the most advanced, our national wealth the most evenly distributed, and our rate of mortality the lowest in the world. I felt now that a New Zealander had even in the matter of female attire excelled all other inventors and beaten the more dressy nations so to speak on their own ground.

There is no serious thinker who has not deplored the pitiable waste—I may say abuse—of ankle and leg that is taking place in every country of the world, and it was partly to remedy this evil that the 'kneeer' was designed.

By the Split, X-ray and other antique patterns of the Old World legs are revealed to all alike, and it requires no prophet to foretell that the run on them will cease—nay must cease—with their departed poetry.

Private property in legs must be maintained, and to tamper with them is to tamper with the very foundations of social order. In other matters there may often exist reasons for innovation and experiment, but you can't dilly-dally with legs, and my 'kneeer' type of Ocydrome again places them entirely under their owners' control.

As the inventor I may be prejudiced—perhaps I am,—but I can imagine no greeting more strictly moral, even sacerdotal, than the twinkle or wink tipped by a 'kneeer,' worked at a fair speed,—say a tenth or fifteenth of a second. The curtsy requires a temporary stoppage of progression; my 'kneeer' can be winked at a walk. Its greeting will supersede the bow. The Ocydrome 'necker' will appeal more to the demi-monde, actresses, and the Smart Set, and has its own special advantages. It can be made completely to hide its wearer's identity, it can delay arrest, and the striking appearance of the garment when fully extended into space will prove invaluable for purposes of advertisement. A procession of ten thousand suffragettes, their skirts telescoped and set at 'time,' marching roped together through the streets of a great city would provide that touch of earnestness and quiet determination that hitherto has perhaps been lacking.

One word more—the proceeds of the sale of the Ocydrome skirt will be entirely devoted to the more efficient ranging of our Sanctuaries and Forest Reserves.

Stewart Island Weka about to examine debris of Kiwi's nest.

and my handkerchief of just the fit Isabella colour substituted; it was wrapped up very tight, squeezed into a rough ovoid, and, with the smooth exterior upwards, carefully placed in the nest. Leask, McLean, and myself then watched the return of the marauders. At first they were a little suspicious at the absence of missile and threat. Then, in spite of the monitory gesticulations of the Penguin's head, and the uneasy swaying and shufflings of his ponderous body, one of them drew more and more near to the nest. Assuming a pose convenient for instant flight, and stretching his neck forward to its fullest length, the blow was dealt, the lens had registered the deed. In the fulness of their joy McLean and Leask rushed metaphorically into each other's arms, whilst I, metaphorically, choked and blew my nose with my fingers—the handkerchief was gone—in an access of emotion no pride could restrain. The flight of the thief had been so precipitate, that the handkerchief—afterwards recovered by Leask and McLean—was found still rolled up some thirty yards away, a measure indicating in feet, the guilt of the bird's conscience and his expectation of pursuit.*

Such a bird perpetually on the look-out, like St. Paul's Athenians, for something new, and eternally patrolling his beat, would instantly detect the smallest signs of an intruder; and, although the nests of the black rat are beyond his reach, their young, when first on the ground, must be very largely taken. The grey rat's family, too, must share a similar fate.

*For use in schools a handkerchief thus rolled up and breathed on till damp makes an excellent substitute for blotting paper.

Nor does the Weka confine himself to the young of either breed. In the protracted twilight of the southern summer, often have I watched our camp Wekas hunting a grown rat through tussock and tangle fern; and I believe it is a fact, that in parts where the Weka is plentiful camps are kept more free of vermin by this bird than by cats or dogs. The curious little bundle often found in the wilds—fur inside and skin outside—is the last stage of a rat taken by a Weka. As a dog acts when wrenching meat from a bone, the Weka places his foot on his prey and finally skins the corpse as a footballer 'skins' his jersied mate.

On the other hand during photography of tree birds or when watching them at a distance, delay was always made endurable and often delightful by the Weka. On to his head, from above, whilst watching from a tree, I have dropped sponge cake, and seen him eat it unamazed, and as if sponge cake came down from heaven like rain. I have had him bathing within a yard of me in a peat pool, ducking and drying himself precisely as do his relatives, the Banded Rail and the Pukeko. I have watched him courting the hen almost among the spread camera legs, arching his neck, raising himself as high as possible and leaning forward with a ludicrously mysterious air as much as to say, "Wait and see what I am going to do to you." I have seen him working the ground for a Pipit's nest, almost as a setter works turnips, the anxious owners meanwhile hanging about, their very solicitude, possibly enlightening and stimulating the searcher; for the Weka is one of the wisest of birds.

On another occasion I have seen him hunting

for a Fern Bird's nest; the Fern Birds at any rate believed so by their outcry—an alarm that sufficiently expressed their opinion of the Weka's character, and which was probably based on dismal experience.

It is to such species as the Crows, the Robins, the Tits, the Warblers, the Thrushes, the Saddleback, the Bush Creeper, the Yellow Head, the White Head, the Wrens, the Tui, the Bell-bird, the Pigeon, and the Parrakeets, that the presence of the Weka is an unmixed boon. If they still continue to survive it is to his ceaseless vigilance, his policing of the woods, his eternal patrol of them by day and night, that they owe their lives; and these species, we may say, he watches without reward. From other kinds aided in the struggle of life, such as Rails, Ducks, Pukeko, possibly, and from the Fern Bird and Ground Lark, certainly, he does take toll. It is a tribute levied, fit and fair, and the merest fraction of what is robbed by rats; a merely nominal fee, in fact, charged for life insurance.

The larger kind of birds, such as Penguins, Kiwis, Hawk, Falcon, etc., under normal conditions watch their eggs too carefully to give the Weka a chance. If, in any way, his presence in the woods affects these birds, it is to insure a high degree of faithful incubation. To them he is a tonic against sloth and carelessness.

If, then, in New Zealand any serious interest ever comes to be taken in our native birds, the most efficient method of preserving the smaller tree-breeding species lies in the propagation of the Weka. Of all the birds that deserve our care he comes foremost, and assistance withheld

from him, is help denied to half the indigenous birds of New Zealand.

The plumage of the Stewart Island Weka is chestnut in hue, his legs are reddish, his bill also reddish at its base, in fact he is altogether a much more handsome bird than our North Island species. One splendid male—it was the mate of the two hens who were never tired of exploring and re-exploring the vacated Kiwi's nest—was of a rich red brown, his feathers shining with resplendent health. I had a long look at him in repose as he emerged from the surrounding ferns, and roared, within a yard of me, at his wives, who probably are as lightheaded and volatile as are the Pukeko hens.

The whistling call of this breed is always uttered very much faster than the more deliberate call of the northerner; and the Stewart Island Weka has a much larger range of calls and notes, most of which are dissimilar to those of the North Island bird.

Except about the settlements, the stretches of drifting sands, and the saturated peats of the mountain tops, everywhere he is abundant. Eggs and young birds of certain species no doubt, he takes in spring and summer, rats and mice when obtainable, but beetles, worms, grubs, and snails, slugs, roots, and berries, are provided at all seasons by the forests and open lands; whilst the stony beaches of the inlets and coasts, furnish shell-fish and crabs. It is when these birds are seen prowling along wet shores, dislodging stones as large as turnips in their open bills—the Weka does not pull them towards him, he moves them entirely by grasp of mandibles—it is then, or when, rising to full height, he delivers

Mosses and Filmy Ferns.

with his bill, a blow worthy of Porthos or Ivanhoe, or when he stands over a bone holding it down with one foot like a dog, and like a dog wrenching from it muscles, meat, and tendons, that you can believe that even a weasel might fall before him.

We did not succeed in getting a nest with eggs, but I believe the Stewart Island Weka, like his relatives elsewhere, breeds very early in the season.

In 1911 whilst walking between the head of Te Anau and Sutherland Falls I found Wekas everywhere very plentiful, not in pairs only but sometimes as many as five grown birds together howking—I have never known a Weka to scratch or scrape—amongst the grasses and cushions of moss. Some notion of their numbers along this track may be gathered from the fact, that without quitting the trail I found two old nests and detected Wekas gathering material for another. These old nests, to the best of my belief, had seen the birth of chicks.

Now, it is quite improbable that the Weasel tribe should have spared particularly the Weka—a ground bird, be it remembered, and unable to fly. Either, therefore, the amount of damage done by Stoats and Weasels has been exaggerated, or of late years they have become less numerous; the latter alternative is by no means unlikely, for many aliens, to my personal knowledge, after at first an immense increase in a restricted area, later have spread over the country side, and in some cases eventually disappeared. A third possibility is this: that by chance, I may have passed through an irruption of Wekas, similar to that, which at Tutira, has in my time more than once occurred.

Chapter XIX.

OUTLAWED.

EXCEPT on my own lake at Tutira, I believe there is no part of New Zealand where the destruction of Shags is not thought to be a righteous action. Everywhere these unfortunate birds are persecuted as the destroyers of fish, and fish they do undoubtedly take. On our rivers and fresh water lakes they are believed to harm the imported trout, and on our seas to be a menace to the fisherman's interests, and it may indeed happen that in some districts, under certain conditions, and for a time, Shags are harmful. Those, however, who have most closely observed the conduct of feeding Shags believe that the captures made in waters where both trout and eels abound are generally of the latter.

On the salmon rivers of Scotland, the Dipper used to be shot down until he was proved to be not an enemy but a guardian of the salmon ova. In Victoria, too, the destruction of Shags has resulted, not in an increase, but very great decrease of fish in the Murray River, its billabongs, and lakes.

Anglers and fishermen, like the rest of mankind, are but too prone to rush to conclusions based on insufficient evidence, and both in

Scotland and Victoria, persistent observation and experiments have shown that the birds fed chiefly on the enemies of the fishes' eggs.

My local experience, too, goes to prove that the presence of Shags in considerable numbers is no bar to stocking suitable water. On Tutira the trout are increasing fast, although on the lake and on the run I have allowed no Shags to be molested in any way whatsoever; and it may yet prove in New Zealand that the indiscriminate slaughter of Shags will turn out to be inimical to the very interests sought to be preserved.

In Stewart Island saleable fish is mostly obtained in the open sea, yet the Shags of every species draw their main supply of food from the inlets. At any rate, it is quite unlikely that every species of Shag does equal harm, and it may well happen that some of these persecuted breeds destroy crustacea that take the eggs and fry of the Blue Cod, and other marketable fish.

On the long, deep arms of the sea and on the creeks and estuaries of Stewart Island, besides the Island species, are to be found the Pied Shag, the Frilled Shag, and the White-throated Shag. Of these, the Pied species has by far the widest range. Although to be found in largest numbers about the inlets he is common, too, about the mouths of the tidal creeks and even far up their sluggish waters. Pied Shags may be seen also, in smaller numbers, perched, like ornamental pinnacles, upright on the rocky points of the outlying islets. This Cormorant's expanse of white belly, neck, and throat, make him, on the dark rocks and against the greens of the bush, impossible to overlook, and a closer approach shows him to be

an extremely handsome bird, with a blue circle round the eye, and gular patch varying from almost orange in the male to yellow in the female.

The Stewart Island Shag never ventures into waters far distant from the open sea, and becomes more and more rare as the narrowing inlets recede into the heart of the island.

The Frilled Shag and the White-throated species do not appear to visit the ocean or the open shores of the island, and indeed chiefly frequent the bays of the inlets.

The Pied Shag, the Frilled Shag, and the White-throated Shag breed in the same communities, and by day perch together in the same roosting quarters. In a region so swept by gales as Stewart Island, shelter must be the point chiefly considered in the establishment of a rookery. There must be timber of a suitable sort, with candelabra-like forks, wherein the nests can be safely set. Fishing grounds must not be too far distant; and finally, there must be deep water close at hand, well provided with snags and rocks whereon the youngsters, fledged but incapable of flight, can clamber, flap, and perch.

Of the many rookeries visited, the largest was one in the north-west arm of Paterson Inlet. It was excellently sheltered from the prevailing westerly gales. The great ironwood trees, where the nests were built, stretched out, as if for room, far over the water. The inlet was an ample fishing ground, whilst on either side of the nesting trees, was deep water where the flappers could swim and dive. Lastly, there were overhanging limbs low to the waves, which the youngsters could reach by violent though brief

Pied Shags.

efforts of flight—high jumps as it were, from the water taken with a very limited run.

Here breed in close proximity and often on the same tree the Pied, the Frilled, and the White-throated Shags.

Upon each of our visits to this rookery, we steamed into the Bay dead slow, and, in order still further not to disturb the birds, allowed the boat at some distance out to drift quietly past the nesting trees. Even with these precautions, however, our approach caused a general consternation, an alarm and suspicion of mankind, but too well founded. In this disturbance it was the fully matured birds, perched either on the low snags just above the water, or on the bare boughs of the high trees, that first flew off, those, in fact, who knew what to anticipate from the advent of man. Their alarm communicated itself to the newly-fledged and half-fledged youngsters, and finally scores of birds were diving from the snags, dropping from the nests on high, and flapping along the surface of the Bay. It was a scene anything but complimentary to the humanity of those who had last visited the rookery.

As we passed within gunshot of the great, gaunt trees, only the most resolute and devoted of the sitting birds remained, and those, almost without exception, were members of the Pied Shag breed.

During September three visits were made to this rookery, and each time it was noticeable that the assemblage of birds on or about the colony had diminished. Of the birds in this shaggery still nesting, the majority were Pied Shags—in fact there were but few nests occupied

by the other two species. I am now inclined to think that when we arrived most of the members of each of the three species had already nested and reared their young, and that it was these nestlings who made up the bulk of the birds disturbed by us, and who, having once left their headquarters, never returned in full numbers.

Certainly the Pied Shag must have started to lay in June; for, although some birds of this breed were still incubating their eggs, there were numbers of strong young fliers about the colony, birds barely to be distinguished from their parents but by the less pure colours of their plumage.

There were others again, resident chiefly in solemn rows, on low, bare boughs just above high tide, who, still, by their solicitations could lure the old birds from their heights. At first the relationship of parent and child in this phase of life puzzled and surprised me, for although the old bird would drop to the waters of the Bay, yet never did tribute seem willingly paid to the ravenous supplicant; with extended wings and gestures of entreaty perhaps for half a minute, the youngster would be forced to beat the water to foam, thrashing in circles round the parent or, as I had elsewhere observed, decoyed to hunt it through the waters. It soon became clear, however, that only in this way perhaps, could these hobbledehoys be induced to take exercise, or receive the subaqueous lessons useful to them in later life. Otherwise, if unwilling to supply food, the old birds would never have placed themselves where pursuit was possible; rather, having come down to the Shaglets' level they would have given cheer-

fully. I have, moreover, watched a youngster, evidently considered by his parents to be out of tutelage, and too old to be thus clamouring for food, given very distinctly to understand that such conduct at his age would not be permitted. The youngster, too, quite comprehended the position, and presently desisted. Whilst thus pestered, there was in the old bird's aspect something very different from the judicial air of impersonal observation, assumed, when at an earlier period, the chick had been forced to thrash round in circles. No doubt this particular youngster had only been "trying it on," when he should have been obtaining his own food.

Each season I am amazed anew at the essential resemblance to man in birds; and nothing is more engrossing than to watch a little scene of this sort. The attempt at imposition, the air of menace intuitively perceived by the mendicant, the growing comprehension that the trick won't work and its cessation.

The Pied Shag is larger by far than either of the other species; and the nests of this breed are in proportion conspicuous. They appear almost always to be based on the older structures of previous years and season by season to be merely repaired. The new material added and put in place, is gathered from the kamahi and ironwoods that support the nest. The leaves and branchlet tips used for their lining are taken from the same trees. The ancient bases of some of the nests are from a foot to five feet deep. One of the latter depth—a sort of funeral pyre—jammed securely between the upright dead terminal forks of an ironwood limb, supported a

Shag atop, and looked very remarkable against the open sky and on the leafless bough. The eggs are blue, which colour later changes to a dirty brown; and in a clutch there are three to five eggs. They seem to be closely incubated, and whilst the chicks are still small, one or other of the parents is always on the nest. Often, too, whilst one is sitting on the eggs, or covering the young, its mate will remain sociably perched on the rim of the stick platform. Again, when the chicks are somewhat older, the parents will stand upright for long periods fronting one another. A returning bird is greeted with an open, brandished bill, a hiss, probably an exhortation to be careful, and some appearance of feigned anger, the wanderer in reply twisting and snaking his neck and head. Shags of this breed appear to possess for their little ones, rather the practical affection of a just step-mother, than a parent's tender love; and the cries of the little ones are, I imagine, mostly set down to be "just nonsense," not to be encouraged.

Standing upright on the nest with an absent air and cold, grey, distrait eyes fixed on the distant sea and sky, the parent bird will for minutes at a time endure unmoved the importunities of her family. She is a study in detachment, immovable, cold, statuesque, whilst immediately beneath her one, or often the whole batch of youngsters, sit up, yammering, their long necks stretched to the utmost, and wriggling and shivering in expectancy. The cadence of their perfectly monotonous whine in its regular rise and fall, is precisely like that part of an ass's bray when the "Hee" and the "Haw" are sounded on air inhaled. This intolerable call

Pied Shag.

after a little, seems to proceed less from hope than from mere inability to cease. In that attitude and with that cry, for minutes together, they beseech, with the iteration of a litany, their mother to hear them. When perhaps the limit of endurance has been reached, or when, as I think more probable, she merely requires a change of position, she will proceed, without so much as a glance or touch, to sit on them. The whining ceases at once, but still from beneath her, like the limbs of the princes smothered in the Tower, a long neck here and another there will dart at intervals. Then all is quiet, the observer feels that their agonies are over, and that life must be extinct. At last she sits enthroned on her brood, complacent and cool, and about as emotional, as one of those dish covers representing in cheap ware, a broody hen.

When about to feed the young the parent bird stands upright and at full height. With her mouth held high above the excited chicks, she begins to open it more and more widely; then in one long uninterrupted, unspasmodic retch, it is lowered until the chicks head and half of the chick's neck disappear in the cavernous reservoir. Considerable assistance seems to be given to quite young birds, for they are pegged down on the nest in most murderous fashion. Sometimes the little one would emerge half choked with some gruesome morsel too large for it, and which would then be re-absorbed by the thrifty parent. When the little fish, half digested, came up too freely and fell, wasted, over the edge of the nest, the old bird could never abstain from a sudden start and a forward movement as if to save them.

Often when watching these quaint birds I have thought of the "Theresa Ward," and grieved to think that man "who loved, who suffered countless ills, who battled for the true, the just,"—that man with all his noble attributes can never hope to vomit with the happiness and ease of a common Shag.*

It is curious to watch a bird still high in the air, about to alight and preparing for descent with open legs straddled, and webbed feet fully spread, and birds when passing above the shaggery are scrupulously careful never to foul the community beneath.

My dealings with the Frilled Shag were unfortunate. The nest selected for particular observation was excellently placed and the birds, though not so quiet as those of the Pied breed, were by no means shy. It was the too sudden and too long-continued erection of the tree platform, that scared the owners of this nest and made them desert. In extenuation of this impetuosity, I may say that my hands were in some degree forced by the proximity of a small saw-mill and the possibility of a raid on the birds. Anything, therefore, seen of this breed was noted from a distance of some yards. The Frilled Shag possesses no frill visible to the field naturalist. It is a very much smaller bird than its Pied cousin. The feathers are less tightly compressed. It can erect a short black crest just above the beak, parallel to its head, not traverse, as is the case in the Stewart Island breed. Out

*The *Theresa Ward* runs (weather permitting) between the Bluff and Half Moon Bay. Although an excellent boat for the weather sometimes encountered in Foveaux Strait, her powers of pitch and toss cannot be gainsaid, and in pitiless publicity deplorable scenes are enacted on her decks.

of the many observed, one or two birds, apparently matured, had on their breasts a few white feathers, and one of the birds, I remember, had white markings of zebra-like pattern. On the nest the Frilled Shag is more restless than his Pied relative, and keeps constantly glancing from side to side. The nest is less than half the size of that of the larger bird, but similar in material, structure, and lining. The eggs are smaller and of a rather deeper blue. I have seen the Frilled Shag on its nest, puffing out the white feathers on either side of the head immediately behind the eye, until it markedly resembled pictures of the rattle snake, with distended cheeks, and about to strike.

My notes on the White-throated Shag are even more scanty. Upon our first visit to the big shaggery, one of this breed was sitting on three eggs and one newly-hatched chick; but the stage, fatal to the Frilled Shag, also spoiled our chances with this representative of the White-throated species. It also has the power of erecting a small parallel crest above the bill, and in lieu of the frog-like noise and bellowings of the Pied Shag, has a sort of yap: "Kow, kow, kow," repeated, and another call: "Ft, ft, ft."

After September, from fear of disturbance, we abstained for nearly a month from even a passing glance at the large shaggery in the north-west arm of Paterson Inlet. No fresh nests, however, were begun during these weeks; nor did the birds of any sort appear to be desirous of breeding; and I came to the conclusion, that by September the nesting season of these inlet Shags was practically finished. The quantity of smaller nests proved that a consider-

able number of Frilled and White-throated Shags had bred during that season.

Calamity of some sort befell both this rookery, and another many miles distant, between the end of September and mid-October. In each, on the former date, we knew of certain nests. In the first a particular Pied Shag was on eggs; in the second a Frilled Shag was sitting hard. Twenty-six days later these marked nests were vacant of eggs or young. There was also a suspicious absence of other nestlings which could not in the month have reached the power of flight. That the rookeries had been raided was, of course, the first and most obvious supposition, but friendly overtures had been made to the Mammon of Unrighteousness, and my friends of the launch also had let the mill-workers know that we particularly wanted the birds let alone. As in all other cases people had been exceedingly obliging, I cannot suppose that on this one occasion there should have been an exception. The shaggeries were miles apart. There were, moreover, no signs of dead or maimed birds, no derelict eggs or chicks rotting on the nests, neither were there shot marks perforating the leaves of the branches in close proximity to the nests. I have never yet been able to solve the puzzle in any way quite satisfactory to myself, but two nests only remained in use. Something had gone wrong.*

*It is whilst watching the manners and customs of these bird communities, that we realize the disabilities of our own race and none, I think, will deny that mankind might with advantage have been hatched from the shell. Oology would have been given a new interest, the fancy of the lad and the whim of the collector would have been raised to the high regions of science.

Pied Shags and nests.

By the coloration and markings of the shell, the philosopher, the anthropologist, and the physician would have been able to indicate the character of the future child. It would have brightened genealogical records, for, after repair, all empty shells would have been carefully preserved. Personally, I can imagine nothing more inspiring for a child, than to have pointed out to it the tiddly little chamber of carbonate of lime from which some national hero—some great flockmaster, or stockowner had chipped.

The mere sight of the shell would stimulate the lad to long for sheep himself. The rich markings would be an incentive and an ideal to the mother also, and just as pious parents in Scotland, used to pray that every boy should be a minister, so each good New Zealander would desire to hatch a squatter.

At the very earliest period, specialization of education would be possible, for, reasoning by analogy, the most brilliantly marked and deeply hued shells would be known to contain the finest specimens of the race, little ones who, in the future, would become landholders. The poorer coloured shells, like the unit found in every Tree Sparrow's clutch, would contain infants of less promise, but still with intelligence enough for the Law, the Church, Literature, and Professorial work.

Lastly, nidification would furnish rational grounds for such gatherings as garden parties and conversaziones.

It is true, as Crossjay Patterne remarks, 'that you can't have everything,' and each great industrial or social change, often does for a time adversely affect a particular class.

I believe, nevertheless, that I am the last man, who would in any way, advocate an alteration that would strike at one of the most honourable bodies of men. Why indeed should I? Many of its members are old personal friends, and it would specially behove us, to avoid even the appearance of any fresh meddling, after the ill-advised legislation recently passed.

No compulsion would, however, be necessary, I think the profession would voluntarily adapt themselves to the changed conditions, and accept them cheerfully. An immense amount of night work would be saved, and if one department was indeed closed, well, another would be opened. I believe, in short, that retenuitestifectation—shell-mending—would absorb every hour saved in other ways. It would be in no degree a less admirable means of livelihood. A high degree of patience, manual dexterity, and precision of touch, would always command respect, and it is not as if the employment of doctors would wholly cease; disease and accident, thank God, would still remain to them. In many ways the change would actually be a gain to doctors.

Retenuitestifectation would be home work, too.

In the house of each young married couple there would be an incubatorium, and many pleasant conjectures have passed through my mind as to the details of nidification. It is not improbable, perhaps, that nests might be built on the lines of that of the Bower Bird, a species that strews in the vicinity of the chosen site flowers, feathers, and bright shells.

If this were so, developing as man developes in chemistry, engineering, and architecture, each hint of sense found in the lower

creation, the incubatorium would I conceive be some sort of small conservatory.

At any rate, even in sunny Hawke's Bay, nidification in the open would be inadvisable. A flood like that of 1896 would do immense harm, for no number of waterproofs would keep out a foot and a half of rain in forty hours. It would be most stuffy underneath them too, and I should fear might in many cases ultimately cause desertion.

Both sexes would sit, and certainly the nest would be on the ground—for our females are poor climbers. Of that I have no doubt, but the probable dress of the incubating female I confess baffles me. That of the male would combine a proper regard for appearances with some degree of comfort and an entire freedom of the lower limbs. As the extremities would be hidden by the edges of the nest, bed socks would be worn, pyjama trousers to the waist, above, ordinary evening dress—dinner jacket and black tie—and for head gear, simply the top hat. Judging by analogy, it is likely that the male, when off his nest, would be very jealous of the presence of any other male about his "run," so that parties held in honour of the event would be purely hen functions.

The female would on the nest, I imagine, be indisposed to talk, a little languid, easily ruffled, with strongly marked sedentary tendencies and, in a word, broody.

The feature of each entertainment, would be the sight of the sexes changing position and on account of his highly specialised breeding attire—bed socks and top-hat—the male would probably exhibit some shyness, and would seek to slip on to his nest very quietly. I believe that actual staring would be considered rude, and that observation would be indirect rather and sidelong.

I think, too, that all talk in the incubatorium would be low and restrained. It would be impossible, nevertheless, after the hen had gone and her partner was arranging himself on the nest, quite to check the enthusiasm of young things, unmated, and still in immature plumage. Nor do I believe that the whispered remark, "Ah, how he can curl his dear legs," would be offensive even to the most timid male.

Chapter XX.

A COMMUNITY OF THIEVES.

THE rock, Kane-te-toe, lies eastward of the Old Neck, rather to the south of Herekopere, and about eight miles from Half Moon Bay. It is a mere dot in the ocean expanse; in extent, a couple or three acres; in calm, a low dark cone; in heavy seas, circled with white and scourged with spray. This rock mass is not more than forty or fifty feet above high water mark, and shows the typical exfoliations of granite greatly weather worn. A vast fissure has split the rock into two nearly equal portions, and through this chasm the seas heave and burst. The southern part of the rock appears to be utterly bare; but on the larger and more elevated northern portion, there is established, and probably has been established for ages, a rookery of the Stewart Island Shag.

During my earliest visit to Stewart Island, I had twice during January and February, been out to this lonely rock, and found it on each occasion thickly crowded with birds. On the first expedition, a roll from the south made all but circumnavigation of it, impossible. On the second venture I was taken near enough to discover the difficulties of focussing an object even

as large as a three acre rock, from the slippery deck of a small craft, climbing and falling in a heavy swell.

The last week of September was the date of my next visit to Kane-te-toe, and again we could not land, but lay for some time off the rock fishing, and watching the Shags, and attempting to photograph the Mollymawk, that came up to partake of the results of our work.

Friendly relations exist between the fisher folk of the island and the gull tribe, for some kinds help him to locate the shoals of cod, whilst others devour the entrails, flung overboard, of the cleaned fish. Soon there were three or four Mollymawk about the boat, close together, and often within twenty-four inches or less of our hands. Amongst these birds there was no bickering; somehow the impression was conveyed that they were too big for the indignities of crowding and jostling. It was delightful to see them, grave and sedate, watching stedfastly, although without undue elation or eagerness, for the "Chinaman," or "Kelp fish," theirs by right and custom, as the birds well knew. Whenever one of these was hauled up, the birds would glide eagerly forward, the propulsion raising on their breasts a little wall of water. A blue cod's capture left them unmoved; with equal surety they knew that was man's share of the catch.

As we slowly steamed off, the birds followed for more than a mile, resting on the water sometimes, and then again pursuing and overtaking us. When about to alight, although their wings gave no hint, their intentions could always be foreknown by the study of their feet and legs—

Kane-te-toe.

Shag on nest—Kane-te-toe.

legs just the colour of washerwomen's hands. When cessation of flight was first contemplated, the legs began to drop from their horizontal position and at last hung downwards; finally, in alighting, they were thrust forward with the webbed feet fully outstretched and upturned, as if designed to act as brakes, and just as a man extends his palms in warning. The water is breasted in a rushing splash and with pinions high held above the chance of wet. Then, in motions at first easy to follow, the great wings close. At last with touches gentle as caresses and smoothing each other down, they lock in repose.

These Mollymawk, although probably immature birds of the first season, were, when thus seen close, very lovely, in their white caps, necks of shades of smoky greys, and darker wings. Their beaks were of yellow and dark horn, the pattern fitting properly only when the bills were closed, the wedge of dark horn extending over the lower part of the upper, and the upper part of the lower, mandible.

No fresh attempt to land on the rock was made until the 10th October; but upon that date we were successful. The sky was without a cloud, and from Half Moon Bay to Kane-te-toe, the sea was as nearly dead calm as it ever can be in these parts. Even the heat, radiated from the naked rock, was tempered by the cool ocean all around. Without mishap, our gear was hauled and handed up, and the glorious day inaugurated, by the discovery, on a pressed and moulded bed of green sedum, of a Skua's egg, over which the parent birds furiously swooped.

This pair of Skua and a few Kittiwakes doing scavenger work were, except the Shags, the only

species seen. The sedum, then just beginning to bloom, a miserable dwarf, brown-green, depauperated moss, and the cotyledons of a mesembryanthemum, probably Australe, made up the vegetation of the rock.

The space, occupied by this community of birds, is parcelled into three portions, each of which has its own use and purpose, and each of which is devoted to certain classes of the commonwealth. The main rock, upon which we landed, is unevenly and roughly terraced, and its altitudes occupied by the older and more experienced breeders. Towards the southern edge of these nesting grounds, where the land slopes off into almost unbroken and smooth slabs of granite, is the Alsatia of Kane-te-toe, wholly given over to thieving and riots, where might is right, and where only present possession is respected. To the north-west dwell the youngsters of the season, fully fledged and of varying ages, and thereabouts the crags and ledges are densely peopled by these immature citizens. It is their school, playground, and particular home.

The area used by the breeders may be one hundred and eighty feet by eighty feet, and probably maintains four or five hundred nests. Each nest is a squat, compact pillar,—the base probably years old and formed of consolidated sea-wrack and guano. The top of each pillar is slightly concave, and there, on a bed of fouled seaweed, lie the eggs or young. The nests are equidistant and tend to form rows, just as in planting trees at regular distances, straight lines develop themselves. Automatically therefore lanes have been formed—alleys along which the centremost birds have to venture when about to leave their breeding quarters.

Pair of Shags Kane-te-toe.

These paths radiate from the middle of the nesting grounds; and, as no Shag can fly upwards, along them the departing birds have to waddle with the most awkward gait imaginable, stepping high and with legs widely spread apart, and showing at every movement the huge unwieldy webbed feet. The space allowed about each nest, has been regulated by three main considerations—firstly, of course, that the birds should have room, just room and no more, to pass out on foot—incoming birds arrive invariably on the wing, settle on the edge of the nest, and from that stance feed their young,—secondly that each Shag should have from its watchtower, or pillar of incubation, sufficient space to defend itself, and—as each pair of the breed is at chronic warfare with its kind—to threaten contiguous birds; also that there should be room to pluck at and peck wayfarers who, by so much as a fraction of an inch, err from the very centre of the trail. The third factor in the determination of the width of these alleys, it is hard to express without vulgarity, and in decent English.

Perhaps it may be put thus: that shags as a race never require any kind of aperient or cathartic and then to refer to that passage in 'Martin Chuzzlewit' where as Martin the younger lies in his log hut, he is visited by Mr. Hannibal Chollop.* Shags do not spit, but for generations each nestful has learnt to calc'late its distance to an inch.

*'. . . for he felt that Hannibal was going to spit, and his eye, as the song says was upon him. 'You need not regard me, sir,'' observed Mr. Chollop, complacently, 'I am fever proof and likewise agur.' 'Mine was a more selfish motive,' said Martin, looking out again, 'I was afraid you were going to——.' 'I can calc'late my distance, sir,' returned Mr. Chollop, 'to an inch.' ''

These central positions may be rather safer from the seas; they may be rather more sheltered from the gales; and it may be that no Shag owning a nest so situated, would care to forego its advantages, just as no man would care to change his lot in every way with that of any other man. Amongst Shags, however, as amongst men, no benefit can be enjoyed without its accompanying disability; and here on Kane-te-toe, the more safe and central the position of the nest, the greater the odium attached to its owner, and the more fierce the hatred expressed. By its look when about to journey forth, a Shag from one of these centralmost nests, betrays his knowledge of the greeting in store. In his aspect there is something of trepidation and nervousness, and younger birds, I suppose, sometimes for a moment hesitate, with the vacillating air of a timid country woman at a crowded crossing, and seem, in the yells of execration, almost to lose their wits.

There is no escape, however, each bird vacating its nest, must pass down the lines, and has to run the gauntlet, as it were, with lowered head, feathers tightly compressed, screamed at by every sitting bird, and barely out of striking and pecking distance.

To me, the conduct of the nestling Shaglets, half grown fellows still in the wool, added still another touch of humour to the picture. Whenever the screaming heralded the approach of a passer-by, each nestful on the track started at once to life. Heads were everywhere reared aloft, and the route thronged to enjoy the spectacle. These nestlings were as fierce in their

Nest and Eggs of Shag—Kane-te-toe.

screams, and as eager as the mature birds to rug and tug at feathers happily within reach, and it was truly ludicrous to watch their juvenile participation in the cruel fun. This pleasure, is denied entirely only to the central quartet of nesting birds—those, that is, in possession of the very best and centralmost building sites, and by whose homes consequently no Shag passes on foot. It is enjoyed to the uttermost and without fear of retaliation only by the outermost birds,—those, that is, with wind-blown and spray-beaten nests—and is delightfully prolonged by a tardiness of progression that not even shame and fear can accelerate.

The Shag, when on foot, must raise high his feet; he must carefully plant them down, and, with what joy must he not fall over the cliff's edge and feel the air beneath his wings.

In its conjunction of trepidation and shame, the mien of a cowed Shag, thus passing down one of these terrible lanes, can be compared only to that of a nervous person threading the aisle of a great church, alone, with creaking boots, the parson stopping his discourse the better to emphasise his displeasure, and every individual of the congregation rising to yell opprobrious remarks, whilst those at the pew doors hurl their hymn books, kick, and attempt to trip him; or, to that of a man in a nightmare, conscious more of ignominy than of fear, condemned to pass, companionless in his shame through a ball-room without his trousers, and with the further consciousness of thick ankles, negro heels, mis-shapen calves, and that he has not washed his legs for a fortnight and two days.

Such are the agonies that Shags can inflict

on their fellow-Shags; and it must not be thought that these comparisons are merely fanciful. Expression of the emotions in birds is as distinct, and interpretable, to those who have watched, as is the expression of his emotions in man's best friend, his dog. Man, dog, or bird, each has been digged from the same pit, moulded from the same clay. Although developed on divergent lines, each has been modelled on a common plan, and there still exists, diluted to tenuity and strained through time incalculable, an essential sympathy. The pain and pleasure of the Beasts of the Field and the Fowls of the Air, can never appeal in a foreign tongue to man. His frame is theirs and it is by this corporeal kinship, that he can read expression as well as comprehend emotion.

The nests on the southern edge of the breeding grounds are never, I believe, finished. In this "No Man's Land," no pair of Shags can complete their work. Here stand the ruins of scores of half, and quarter built nests, their walls broken and eroded with continuous skirmishes, scufflings, and chasings. From the pillars rather more advanced, the seaweed lining is pilfered as soon as spread. On the untidy floor, dusty with trampling and gritty with guano, sand, and fragments of fish bone, eggs are scattered everywhere. Any real knowledge of the building habits of these Stewart Island Shags cannot of course be gathered in a day, but I think that birds relegated to this Alsatia must be breeding for the first time. Thieving, though general throughout the colony, does not elsewhere culminate in communal ruin. Even, however, in the better ordered portion of the

Shag Alleyways—Kane-te-toe.

nesting community, stealing is all prevalent, and after an hour almost ceases to attract attention.

I have seen a bird take up in his bill, eggs, presumably from a strange nest, and with a slight movement of his head cast them aside. He then, I remember, proceeded on his way; but as this happened immediately after landing, there was so great a confusion and so much of interest to follow that, taking my eye for a moment off this particular bird, I lost him in the crowd.

Then again, I saw a bird ransack his next door neighbour's nest. In it there were little helpless jet black, naked chicks. No kind of pity was shown them. Their bedding was not taken a bit here and a bit there, but borne off in huge greedy mouthfuls, until the wretched nestlings were finally left bare on the sun-beaten top of their coprolitic pile. But I think the evil propensities of the race were even more markedly shown in a third case. The sinner was evidently, from his size, an old bird and one of the so-called dark "pink-footed" species. The tardiness of his every action gave him a double air of sobriety. He might have been an elder of the Kirk in his "blacks," yet he paused to rummage over a whole nest for a pitiful bit of dirty stick, and then hopped still very slowly from tier to tier of the rows of nests vacated, in the immediate proximity of the camera. I think it was the deliberation of each downward hop and the shamelessness of the paltry theft, so open and so brazen—a penny stolen from the plate—that emphasized the cold depravity and passionless sin of the old bird. I do not know but that the wickedness of the action was increased when the

wretched twig was dropped; it had not even been required.*

Although most of the shags had built, many were still attempting to do so, yet, during the hours spent on the rock; a single bird only, was noticed flying in laden with seaweed, and the habits of robbery and theft so engrained in the breed, must cause a considerable wastage in eggs and young life.

The individual birds photographed varied in temperament. Many were almost regardless of the camera, and all permitted a close approach, provided it was slow and circumspect. On two occasions, however, once when McLean slipped, and once when the focussing cloth was blown from the camera, sudden panic seized a huge portion of the sitting birds. A stampede ensued, terrible to contemplate, and during which the young and eggs were trodden by dozens of huge webbed feet, and cuffed and buffeted by multitudinous wings. The old birds, however, almost at once returned, and, to my great relief, neither eggs nor chicks seemed to have been dislodged by the brief tornado.

Only one or two in a hundred nesting birds, showed any attempt at a crest, and one of these —the best example—we photographed, showing the transverse bar of a few isolated feathers across the head. On the gular patch of another

*At my age a man can hardly deteriorate, he has reached the limit, but McLean is young still. I could never again have taken him to this rock. My supply of underclothing was limited, I could not have afforded it. At our headquarters at Half Moon Bay his bedroom was next to mine; and another day amongst these Shags would have loosened every fibre in his moral nature. He would have pillaged my portmanteau without a thought of wrong.

Nesting Plateau—Kane-te-toe.

bird photographed there was a very distinct patch of clustered grey parasites.

In many of the nests were eggs varying in colour, from fairly clean blue to chalky drab, and differing in shape from ovoid to narrow elongate.

The eggs of the Stewart Island species are much less blue than those of the Pied Shag. Many nests contained new hatched chicks, perfectly naked, and jet as negroes. There were other nests containing woollies in all stages of growth. These, with two or three exceptions only, were clothed in dark down, the abnormal birds showing down mottled and spotted on the breast and belly. Finally there were the fully fledged youngsters, in their bachelor quarters on the rocks, and northernmost edges and ridges.

The breeding season, therefore, of these Stewart Island Shags must extend over several months.

About four o'clock in the afternoon the great heat began to abate, and the black down of the woolly nestlings, either did change, or seemed to change, into a sunburnt brown. Then, too, a new call began to arise from the rock. It was the call for tribute from hundreds of hungry throats, for now, from the estuaries and inlets, the foraging birds were beginning to return laden with their families' evening meal.

Either the sexes of the Stewart Island species of Shag vary much in colour, or else the breed illustrates, in a very remarkable degree, the law of dimorphism, the plumage of the one, being black with green reflections, of the other pure white on belly, neck, and throat, and with other marked differences. Watching the busy

scene within my ken—its arrivals, departures, and perpetual changes,—I was yet able to count eleven couples simultaneously on their nests, indubitably mated and differing thus in plumage.

We left Kane-te-toe with regret, and were never again able to land, prevented on one occasion when well out to sea by a sudden westerly gale, on another by a roll from the south, that only reached us when the launch was within a couple of miles of the rock.

Chapter XXI.

THE YELLOW-BREASTED TIT.

NEITHER in plumage nor in habits does the Yellow-breasted Tit of the South, differ greatly from the Pied Tit of the North Island. In the former breed, a yellow waistcoat is worn, in the latter a white; but the depth of the colouring of the South Island bird varies very considerably. Sometimes a matured male may be seen which might almost be mistaken for a northern bird, so very faint is the yellow hue; and sometimes, though rarely, the breast, the spot over the beak, and the angular patch on the primaries, are of a very pale crimson or carmine wash.

In habit, the species differ as slightly as in plumage. They do, however, differ. The Yellow-breast hen is very much more bold than her recluse sister of the North, whom I have never yet heard sing. I have, however, on two occasions heard the Southern female use her voice, and I think that, even after making allowances for the dissimilar forests of the North and South, the typical nesting places also vary. Sites common to each species, are side limbs broken by gales or smashed by falling timber, and where, sheltered from rain, the inner surfaces of the scars have mouldered into wood

powder, and formed cup-shaped cavities. In fact, any dry jut of sound dead timber is, on this account, worth inspecting for either breed of Tit, on either island.

The typical nesting site, nevertheless, of the Yellow-breasted species, is amongst great strips of peeling bark, loose, and nearly dissevered from the bole, and often still farther guarded by a depth of wood powder, sufficient to dry-bog a marauding rat.

In the forests of the North, on the other hand, a great proportion of the nests are in one most favoured site,—the knee, that is, of a small tree bent over an open forest path, the knee-cap gone, the wound healed, its raised edges rimmed with sound bark and deflecting all wet but such as is directly occasioned by the falling rain.

The nests of both species are usually placed from seven to fourteen feet off the ground, and built so well that scores of them can be found in the winter woods dry and whole.

November is the Yellow-breasted Tit's building month, and its breeding season seems to be unusually contracted, at any rate neither much later in the season nor much earlier have I got a nest. Except in the case of pairs who through misadventure have lost their first clutch of eggs or squab young, perhaps this Tit may be found to build but once a year.

During our stay in Stewart Island, over a dozen nests were obtained, and several of these were photographed. One in particular I had long expected to get, having often watched the male feeding his wife as early as the last days of September, and weeks before the nest was begun. When found, however, it proved quite

Female Yellow Breasted Tit.

useless for purposes of close observation, being placed unusually high on a lonely tree. Most of the material was gathered from a spot over 200 yards distant, and was carried in by the hen. On each expedition she was accompanied by the cock, flying far apart but on a parallel line, and seeming to be exercising a close supervision.

About this date we got, on an island in Paterson Inlet, seven nests on three sequent days, and of this number, two were discovered by the hen's anxiety to mislead. Many species in order to distract and delude, feign broken wings and death agonies, but the hen Tit flutters in quite an original fashion on the ground. Both wings are held upright and set just at the angle of the cheap toy shop birds suspended on wires. The primaries are spread out very fully, and the plumage about the head much ruffled. Excellently, however, as the fooling was done, the hen would, if very abruptly discovered, seem sometimes to lose her presence of mind and in the sudden start, forget her feints and affectations.

The female Tit is much more cautious in approaching the nest than the male, who will have fed the chicks, regardless of man's presence, for an hour perhaps, before the hen can make up her mind to follow his example.

One particular careful hen I remember, which, although fluttering up and down and round about, with provender in her bill, could not make up her mind actually before me, to alight on her nest. This precaution was taken on her nestlings' account, not on her own, for often she herself had been very near to me and to my camera. Although she must have noticed

her mate bringing in supplies, she trusted him, and no doubt believed that in some way I was hood-winked by his manœuvres, and that the secret of the chicks was not in any way betrayed. The sexes differed only in their estimate of the quality of my intelligence, the cock who fed the chicks thinking I was a bigger fool than I looked, and the hen who abstained, believing I looked a bigger fool than I was.

Perhaps it is not easy to fully appreciate the anguish of the mother, voluntarily debarred by love of the chicks, from love's first charge, the ministering to their needs; and I have sometimes thought it may have been this extremity of tenderness and pain, that wrung from her the little stuttering song, the first singing I had ever heard from a female Tit of either breed. She sang, and once again sang, as she passed over them, as if imploring pardon for apparent coldness and neglect, and entreating their love and forgiveness.

It was on this nest, and immediately after its discovery, that I was furnished with another instance of that obedience, on which the lives of young things depend in the wilds. It happened that, owing to conditions of locality, an unusually long time had been spent in the erection of a rough stage, this unavoidable delay entailing an additionally long deprivation to the nestlings of their food supply. The appetites, moreover, of the young birds must have been whetted to the sharpest edge by the sight of food carried in the parental bills, past them and over them. At last, however, the stage was complete, the camera legs straddled out, the nest in focus, and the cock standing over his

Male Yellow Breasted Tit.

famished and eager family with a long green caterpillar, some crushed daddy-long-legs, and quite a bill full of other dainties. The necks of the brood were elongated to the utmost, and shivering with eagerness, their throats were open like yellow crocus blooms in sun, when some slight stir of my coat caught the parent's eye. Instantly he signalled, "Down, Jenkins"—several species, perhaps all, can sing and whistle with bills apparently crammed with food—and the long necks shrunk and the blossoming throats faded, and thus, deathly still, though famishing, crouched the brood until again called to life. Unless fully considered, the marvel of this obedience can hardly be appreciated, for the appetites of little birds cannot be gauged by those of the young of man, or of the higher animals. Babies do not require food for many hours after birth and then at long intervals; but nestlings of some breeds feed within a very few minutes of hatching, and this difference may supply us with some criterion as to the relative cravings of each. The chick must grow rapidly, to pass swiftly through the most dangerous period of life; it must have nourishment almost at once, and ever afterwards at brief intervals, yet, in the case instanced, when a child would have yelled unceasingly and perfectly regardless of command, the little Tits, though starving with hunger, obeyed with instant promptitude.

To this nest, although fully built and containing chicks, from time to time feathers were added; and it was here, that whilst watching a Bell-bird collecting nest materials, and whilst I was for a few minutes neglectful of the Tits, that again, for the second time, I heard

the hen bird sing. It was a cold, wretched day, and the female, still rather shy, had not been for some time on the nest and keeping the chicks warm. From my position I could not see the nestlings, but, fortunately, got a momentary glimpse of the male bird going off with bill crammed. Such an event I knew could only result from one cause, the young were beginning to stiffen with cold, and to lose the power of erecting their necks and of opening their mouths. Whilst I was hastily preparing to leave, I saw him revisit the brood. With that happy eagerness of approach, so characteristic of birds returning to their young, he arrived, but on the nest's rim paused as if in astonishment at an apathy in his family, never before experienced. By touches on their heads with his beak, he endeavoured to stimulate the poor cold nestlings. Failing in this and thinking then of the sanitation of the nest, a branch of hygienic work that with Tits always follows the feeding of the chicks and with bill still full, he rummaged about their tails as much as to say, "Well, if you can't eat you might buck up and try a what-do-you-call-um." With instincts utterly at a loss, he sang over them a shrill little jar, and then hopped in great excitement or indecision, or perhaps both, thrice across the nest, and, after perching for a moment on a near twig again flew off with his unaccepted beakful.

At once I left the stage, and from a farther distance watched the hen return. She held in her bill an insect of some sort, and although but half visible to me, she, too, must have offered it and been amazed at refusal, for I again heard

the little jarring sound, similar, except more shrill, to that of the male. She, too, under these inexplicable conditions, hopped several times back and forwards over the nest, before, still unaided by reason, and following the bidding of instinct alone, she finally settled on to the nestlings. This jarring song was quite unlike the stuttering notes I had heard from her before, and was perhaps a reveillé used but very rarely.

I was surprised to notice how, on three occasions, the sharp snap of a twig broken under foot caused the nest instantly to blossom with golden gapes. Nothing, of course, could have been dry, yet the sound was just such as would have been produced in open, arid woods by the crack of a brittle branchlet; and I had already wondered at a similar noise made on Piko-mamaku-iti by a Mutton Bird blundering in the dark. The vibratory tremor of the sound, to my human hearing so totally unlike any bird call of any species, represented apparently to the nestling Tits the chirp that calls to food.

Perhaps just as we know that many persons cannot detect the high squeak of the bat, and as the Tui in spring can be seen singing, and certain ducks seen to be quacking though no sound is heard, so I daresay the sharp snap of the stick may have resembled some part of an entire song inaudible to us.

Up to this date, owing to the gales that rocked not only the stage and object nest, but heaved the very blanket of peat in which the tree roots were anchored, our photographs had been wretched. We were pleased, therefore, when late one afternoon, whilst watching a pair of Bush Creepers carrying nesting material into a dark thicket,

we discovered another Tit's nest in a site excellently adapted for photography. The gnarled bole, already half dead, in which this last found nest was placed, furnished less resistance to the wind; standing more in the open it offered better conditions of light, and lastly was rooted in low granite cliffs.

From the beginning, too, the pair of Tits owning the nest proved most amenable. I was allowed even that first afternoon, to look into their home at close quarters and to see their nearly nude quintet fed.

Next morning was occupied in watching the Bush Creepers' movements in the thicket, and the afternoon spent in getting the pictures of Tits facing pages 188 and 190. Both male and female had become by this time perfectly careless of our presence and carried in their stores of food along certain well-established lines of flight, about nine feet from the ground. As I wished to have the sexes on one plate it was decided we should again visit the nest the following day, and in the meantime leave the legs and tripod in position, wrapped up in oil-skin coverings. Next morning, however, although the female sat, the male never approached the nest, and after the lapse of some considerable time my surprise began to give place to anxiety. Some accident, I feared, must have happened. At length, however, I caught a glimpse of him in the scrub some yards distant; and looking, as I then and there jotted down, "furtive and mysterious."

I have already alluded to the possibility of extremely exact interpretation of the subtler shades of expression of emotion in birds, and now again do so. The adjectives, scribbled in

Spider Orchids.

haste, and before the event was known, proved themselves to be apposite when the whole circumstances were elucidated; and, "with dashed spirits" and "subdued-looking" added, completely pictured the perturbed air of the little Tit.

Still, however, he made no attempt to feed the chicks; and I was still further puzzled when, instead of bearing food as had been his custom, to his family, he whistled the hen from her nest and fed her, or, at any rate, gave her food in the thicket. This happened several times, the hen always returning at once to her duties. At last, despairing of obtaining the pair on one plate, I photographed the hen alone, and retired to cover some dozen yards away where, unseen or at any rate uncared for, I could watch both the Tits' nest and the movement of the Bush Creepers in the adjoining thicket.

I had been sitting there in silence for some minutes, when the mystery of the Tit's conduct was solved, and I became conscious, for the hundredth time, of the depths of my ignorance of the meaning of things. The hen Tit suddenly left her nest and simultaneously a Long-tailed Cuckoo glided down. From my hiding place I had a perfect view of all that passed. For a fraction of a second he clung to the hard wood forming the outer rim of the nest cavity; his body and long tail hung downwards and seemed to be pressed inwards against the tree. His head was immediately over the nest and nestlings, and his bill, I should think, must have actually touched them. His whole attitude was that of a gymnast drawing himself up till his chin was raised above the parallel bar.

My first thought was for the priceless picture I had lost; my second, that the Cuckoo might, as I then believed, return to devour the remaining chicks—if indeed he had not already taken the lot.

Although, however, I crept to cover again, and bulb in hand waited for long, the Cuckoo never returned. When at last an examination was made, instead of an empty nest, I found that every chick was there, not one had been taken. I acknowledge my astonishment was that of the householder, who watches his home entered by a burglar, yet finds that the criminal, after ample leisure, has departed with empty hands. But although thus proved innocent on this occasion, the general depravity of the Cuckoo tribe was, to my mind, very fully established by the conduct of the Tits, who never again ventured near their nest and allowed their little brood to perish.

During that afternoon several times I came across the bereaved pair in the neighbouring thicket. It was pitiful to watch the little fellows, still flying on and off the ground as if, in spite of its futility, the impulse to gather food persisted still.

To reiterate, I am positive that in every way the position was normal, and that each action in the drama would have occurred precisely as it did, had I been nowhere in the neighbourhood of Stewart Island.

The Tits, male and female, tame even on the afternoon of their discovery, had become perfectly indifferent to my presence on the second day; equally indifferent was the hen on the third day, when, if anything, the camera

might have been a foot nearer to her. She never hesitated, when called off and given food by the male, to return at once in a single straight flight to the nest. Certainly the Cuckoo knew of my proximity, just as he knew of seals in the inlet or cattle on the neighbouring island. To him each of the three kinds of beast was equally innocuous. It must farther be remembered that I had left the camera and was, I believe, hidden when the Cuckoo visited the nest. In either case, however, he can have had no fear, for no wild creature in the least degree suspicious would have foregone the advantage of sight. Yet for an appreciable part of a second, he inspected the nest with his back to my hiding place and his back also to the nearer camera. My Newman and Guardia was set at a speed of one-twentieth of a second, and I remember thinking I could have comfortably got him in that fraction of time.

Observations of whatever nature in regard to the Cuckoo are of interest, and I have given the details fully; but as to this particular Long-tailed Cuckoo's intentions, and as to the meaning of what was done that morning, I have no theory into which all the facts will fit. With the cruel knowledge of nests and their sites, that his race must possess, it is puerile to believe him in doubt of the contents of this one. Equally futile is it to believe so prolonged a scrutiny was required without some particular reason. Finally, I should add that the camera was at once removed and that we ourselves departed from the spot. Some spell, however had been cast on the Tits; before it instinct and impulse to act were torpid, and, as I have said, the brood was allowed to perish.

Some readers will have noted with surprise, and some with pain, that the conduct of the male Tit during the Cuckoo episode, stands forth in no very noble light. Those who have done so are thinking in terms of man and not of bird. His concealment of himself in the thicket, we should designate by such foolish words as "cowardly," "unmanly," and "unchivalrous," but the verdict of male Tits would consider that his proceedings were wise, eminently proper, and that he could not have acted otherwise and yet done his duty. What man calls chivalry, the feeling which, in Christian countries through a reverence for the mother of God, has become transferred to woman in general, and which ordains that the male shall perish under all circumstances to save the female, has no place in the working of the minds of male animals. If we can imagine in a community of Tits some disaster analogous to that of insufficient boat accommodation in a sinking liner, the male birds would firstly save themselves, not for themselves, but for the race, for their future broods. Sentiment is a luxury even to the wealthier and more leisured class of mankind, the poor can hardly afford it, and to the creatures of wood and wold this is indeed a work-a-day world. It is this hard or "horse sense" that makes a parent bird, about to build again and rear another brood, hustle and thrust out from its feeding grounds the very creatures it would a few weeks ago almost—not quite, always the race comes first—have died for. The male especially, is thinking already of his next family, and getting strong not for himself or, if for himself, not selfishly, but as agent for the race.

At Tutira, with our domesticated but absolutely free, Pukeko, there comes a time after each brood is of a certain age, when the male no longer gives up what before was willingly proffered; he has become selfish with the enlightened selfishness of prevision. He is obeying that most profound of all instincts, the instinct common to either sex, though felt in greatest degree by the male, which in queen bees even in the grip of war forbids a mutual death because of their hives, and which in fighting women, no doubt causes them to scratch rather than strike where a blow might easily be fatal.

From a human point of view the male bird is a colossal egotist. The hen and nestlings are merely parts of himself—parts easily duplicated and replaced—and if of value to his lordship, valuable as portions of his entity. In their deaths a part of him perishes, he is injured in their injury, but that he, the male, who owns these properties, should lose his life in their defence, is something to him outside the limits of sense.

If mankind has another standard of conduct, it may be because of the knowledge that he belongs to the commonest breed in the world, and that in him the blind feeling for his race has become weakened by a wider outlook. He knows he can afford to die and yet inflict no injury on his kind.

My little volume is now ended, and as, in its first chapter, I pointed out how our surviving species could be yet saved, so now in its last I return to the subject. 'Only by varied iteration can alien conceptions be forced on reluctant

minds,' says Spencer, but I believe our national mind is rather supine than reluctant. The idea has gone abroad that most of our remarkable species are extinct, and that the remainder are doomed, but these beliefs are erroneous.

Our avifauna may yet exist in New Zealand, as do my native plants on Tutira. These have been watched for thirty years, and during that period, to my knowledge, but one has disappeared.

Certainly they have been driven from soils and sites, useful to man, but still survive on precipices and barren lands, and what is the Westland National Park but a series of precipices? and what are Stewart Island and the far southern groups but barren lands? It is on such natural sanctuaries as these that I advocate the efficient protection of our avifauna, and the enforcement of laws excellent in themselves but at the back o' beyond not worth the paper on which they are printed. In its birds, each generation has but a life interest; no more than sea or sky do they belong to any period. They are property entailed and to be transmitted age to age inviolate. Their annihilation, is in very truth wrong done, not to ourselves, or in our own time alone. Civilization succeeds civilization as do the seasons of our mortal life, cities are razed and on their ruins others rise, knowledge destroyed can be again attained, but the extinction of species is an everlasting blank—a loss that time itself cannot repair.

LIST OF SPECIES.

The species illustrated in this volume are:—

Puffinus griseus—Mutton bird.

Pelecanoides urinatrix—Diving Petrel—Kuaka. Kuaka is also in the North Island a name given to the Southern Godwit—Limosa Novæ Zealandiæ.

Prion Vittatus—Broad-billed Petrel—Parara or Parera. The latter word is elsewhere applied to the Grey Duck —Anas Superciliosa.

Prion turtur—Dove Petrel—Titi Wainui.

Megalestris antarctica—Sea Hawk.

Larus dominicanus—Black-backed Gull.

Miro albifrons—South Island Robin—In his History of the Birds of New Zealand Buller gives us three species of Robin—Miro Australis—North Island Robin—Miro Albifrons—South Island Robin—and Miro traversi—Chatham Island Robin. In his supplement published many years later, he speaks of Miro Albifrons as one South Island form, and of Miro Bulleri as another—the former "with underparts rufescent"—the latter "with almost the entire under-surface pale lemon yellow." The species watched by me was neither "rufescent" nor "pale lemon yellow" on breast or belly. As, however, it could not have been the North Island bird, nor the Chatham Island bird, nor another doubtful species—the Snares bird—Miro Dannefordi—the photographs are those of Miro albifrons, possibly slightly differentiated from the type. The fact is, that there are in species endless minute variations, not only in size and coloration, but throughout whole districts, in degree of shyness, and, I believe, in singing notes.

Megadyptes antipodum—Yellow-eyed Penguin.

Eudyptula minor—Blue Penguin known in Stewart Island as the Rock Hopper, a name elsewhere given to Pygoscelis papua.

Nestor meridionalis—Kaka—Brown parrot.

Apteryx Australis—Stewart Island Kiwi.

Ochthodromus obscurus—Dotterel.

Sphenæacus punctatus—Fern Bird—Reed Sparrow. Fern Birds in Buller's early volumes are classified as Sphenæacus punctatus—Fern Bird; Sphenæacus fulvus—Fulvous Fern Bird; and Sphenæacus rufescens—Chatham Island Fern Bird. Writing of the first-named species, Buller says, in his Supplement, "I have received a pair of Fern Birds from Stewart Island, which seem to represent a larger race than the one inhabiting the North and South Islands. In plumage it is precisely similar, except that the black spots on the breast appear to be more pronounced." The birds photographed may, therefore, be forms of either Sphenæacus punctatus or Sphenæacus fulvus now re-named Bowdleria punctata and Bowdleria fulva, and species so nearly allied that Buller in his Supplement only "thinks" they should be kept distinct, and remarks further, that they are "no doubt very closely related." Oology can claim perhaps no right to speak authoritatively, but the eggs taken from nests got on Tutira and elsewhere in the North and from nests got in Stewart Island are perfectly dissimilar, the former always blotched and freckled with colour edges ill-defined and running—the latter always speckled, each minute speckle distinct and clear. There are slight but apparently constant differences in the shapes also.

Acanthidositta chloris—Rifleman.

Cyanorhamphus auriceps—Yellow-fronted Parrakeet.

Anthornis melanura—Bell-bird.

Ocydromus Australis (*Ocydromus Stewarti*—Ogilvie Grant)—South Island Weka.

Phalacrocorax varius—Pied Shag.

Phalacrocorax chalconotus—and *Phalacrocorax Huttoni* or *Stewarti*—Pink-footed Shag and Stewart Island Shag, may, I think, prove to be one and the same breed. Buller, speaking of the latter species, says in his supplement, "it associates closely with Phalacrocorax chalconotus, occupies the same breeding colonies, and I suspect often crosses with that species, for my collection contains several specimens in what looks like an intermediate plumage; so much so that for a time I had a strong suspicion these birds would prove to belong to one and the same species. I am not absolutely

clear about it yet, although my collector is very certain that they are distinct." Buller further remarks, "I have before me as I write eight specimens, all from Stewart Island, from which I take the following notes," these notes showing that the white dorsal patch and alar bar were to be found in male and female bird alike. Mr. Ogilvie Grant, to whom I wrote on this matter, replying in a letter of March, 1913, says, "I am not in any way inclined to agree with you about the kinds being one and the same species. It is probably a mere accident that a Black Shag is standing beside a white-breasted one." This suggestion that a stranger should have been allowed to remain peaceably and undisturbedly on the edge of another Shag's nest cannot however be entertained. Ten other couples of different plumages were thus seen together in one corner of the rookery, and, in my opinion, were indubitably mated. Any way, as Mill has pointed out, in his clear candid way, error promulgated is often the means of drawing fresh attention to truth and should on that account be welcomed. If his observations and facts are correct, the field naturalist's surmise and theory, even if erroneous, can do but little harm. None should know better than himself that his knowledge, compared to that of scientific workers at Home, is as a child's to that of a man. Though it is improbable that the learned world will be stirred to its core over the identity of my unrighteous friends of Kane-te-toe, yet ornithologists will, I am convinced, welcome observations as they appear to the recorder, rather than lack the chance of utterly dispelling doubt and making surety doubly sure.

Petroeca macrocephala—Southern Tit—South Island Tom-tit.

In all cases the nomenclature of Hutton and Drummond's "Animals of New Zealand" has been followed. That is the volume most accessible to those interested in our avifauna.

INDEX

Albatross, flight of compared with that of Petrel, 26.
Alsatia, 178, 182.
Apteryx, nocturnal habits of, 96.

Bell-birds, on Piko-mamaku-iti, 32; on Herekopere, 38; mobbing a Morepork, 55; in the Rakiahua woods, 67; in coastal woods of Stewart I., 70; on Ulva, 129; food supply diminishing, 140; friendly disposition of, 141; nests of, 141; a devoted sitter, 142; eggs of, 143; resemblance to Tui, 143; flight of, 144; power of mimicry, 144; tolling-note, 144; owes life to the Weka, 159; collecting nest materials, 191.
Billardier's polypod, 89.
Bittern, 151.
Black-backed Gull, on Herekopere, 15; over future breeding grounds, 21; not sitting hard, 39; distribution of, 44; food of, 46; keen sight of, 46; nests under observation, 47-49.
Blackberry, an alien noxious weed, 6.
Blow fly, not on Herekopere, 15.
Bracken, 13, 21.
Bush Creeper, 38, 67, 69, 86, 159, 193.

Call, of Petrels, 27, 36, 42.
Campbell Island, 8.
Camps, on Herekopere, 10, 18-30, 38-43; on Piko-mamaku-iti, 31; on the Rakiahua, 66, 114; on Stewart I., 150.
Cod, Blue, 163, 176.
Coprosmas, 70, 85, 130.
Cormorants, 91, 163.
Crows, 1, 86, 159.
Crows, Orange Wattle, 69.
Cuckoo, Long-Tailed, 15, 195.

Daisy Tree, 14, 142.
Danthonia grass, 97.
Dotterel, Banded, 74, 108.
Dotterel, New Zealand, 102; young of, 103; nest of, 110; liable to diseases of the foot, 112; range of, 118.
Dunes, sand, 100.

Enderby Island, 8.

Falcon, New Zealand, 40, 132, 159.
Fantails, 67, 71, 86, 129, 142, 147.
Fern Bird, on Herekopere, 15; scarce on Piko-mamaku-iti, 32; plentiful on the Rakiahua, 68, 69; of Rakiahua and Mason Bay, 114-122; nests of, 119, 120; eggs of, 119; plumage of, 120; chirp mimicked by Bell-bird, 144; preyed upon by Weka, 159.
Ferns, 13, 14, 36, 86, 97.
Ferret, importation of, 4.
Fire, danger from, 6, 7; damage from, 151.
Flight, of Petrels, 24, 26.
Foliosa grass, 24.
Food supply of birds decreasing, 5, 7, 140.
Forest Reserves, 5.
Foveaux Strait, 10, 31, 127.
Fuchsia, 70, 137, 141.

Gannet, 111.
Gisborne, 141.
Goldfinch, 119.
Ground Lark, 112, 159.
Groundsel trees, 13.
Gull, Black-backed, on Herekopere, 15; over future breeding grounds, 21; not sitting hard, 39; distribution of, 44; food of, 46; keen sight of, 46; nests under observation, 47-49.

Half Moon Bay, 7, 11, 19, 51, 92, 175.
Harrier, 15, 33, 40, 119.
Herekopere, 10, 11, 15, 38, 44, 53, 175.

Imported birds, 6.
Ironwoods, 67, 71, 85, 164.
Islets off Stewart Island, 7, 10, 31, 41, 52, 118.

Kakas, inland woods alive with, 66; migration of from upland woods, 68; thronging coastal woods, 70; numbers of left, 71; on Table Hill spurs, 72; chicks of, 73, 75; nest under observation, 75-83; affection for young, 81; vocal powers, 81; frequent tree tops, 86; nest of, 127; visiting blossoming eucalypts, 141; eggs of, 143.
Kamahi, 67, 76, 85, 128, 153, 167.
Kane-te-toe, 175, 177; a Shag Alsatia, 178, 182.
Kingfishers, 74, 132.
Kittiwake, 15, 21, 108, 177.
Kiwis, learned papers on, 1; traces of, near the Rakiahua, 68; breeding in lower lands, 69; first burrow found, 83; burrows difficult to locate, 84; burrows of, 86, 92, 152; chick in captivity, 90; lodges of, 95; still plentiful, 98; range of, 118; stimulated to faithful incubation by Weka, 159.
Koromiko, 69.
Kowhai, 141.
Kuaka, 12, 15, 16, 20, 22, 24, 28, 32, 39, 41.

Lomarias, 89.

Macrocarp, 142.
Mallows, 15.
Mangatu, 13.
Manuka, 67, 69, 120, 141, 147.
Mason Bay, 99, 114, 144.
Matipo, 70, 141.
Mesembryanthemum, 178.
Migrations of birds, 66-71.
Mollymawks, swooping upon Kuaka, 23; on Kane-te-toe, 176; description of, 177.
Morepork, 55, 56, 127.
Motu, 13.
Mullein, 150.
Mutton Birds, 10, 16, 23, 25, 34, 38, 41, 193.
Mutton Bird scrub, 13, 21.

Napier, 141.
Nettle, 13, 24, 32, 40.

Oats, wild, 15.
Owen, 1.
Owl, 55, 57, 128, 139.

Parara, 16, 21, 23, 25, 32, 39, 42.
Parrakeets, on Herekopere, 15; on Piko-mamaku-iti, 32; in inland forest, 67; frequent tree tops, 86; nesting sites for, 123; nest of Auriceps, 127; breeding chamber of, 128; feeding the young, 130; how fed in captivity, 134; note mimicked by Bell-bird, 144; owe lives to Weka, 159.
Parrots, 67, 77, 79, 83.
Paterson Inlet, 63, 141, 164, 189.
Peat, 13, 69, 111, 114.
Pegasus, 58.
Penguin, Blue, on Stewart I., 58, 63; nests of, 64; irascible temper when nesting, 64; watchful of eggs, 159.
Penguin, Tufted, 58, 159.
Penguin, Yellow-eyed, 58; paths of, 59; breeding, 60; appearance of, 62; nest noticed by Weka, 155; watchful of eggs, 159.
Petrels, breeding quarters visited, 10; on Herekopere, 12, 15-30, 38-43; flight of, 24, 27; on Piko-mamaku-iti, 31-37; mode of alighting, 25, 36.
Pigeon, 15, 32, 67, 71, 75, 86, 91, 137, 143, 159.
Piko-mamaku-iti, 31, 41, 118, 193.
Pipit, 158.
Pole-cat, importation of, 4.
Porangahau Beach, 44.
Pukeko, 33, 119, 151, 159, 160, 199.

Rabbits, 4.
Rail, 151, 159.
Rakiahua, 66, 71, 114, 120.
Rata, 127, 149.
Rat, Black, 31, 149, 157.
Rat, Grey, 150, 157.
Rats, 51, 52, 143, 149, 158.
Red-breast, 53, 142.
Reserves, of forest, 5.
Rifleman, on inland forest spurs, 67; migration to near sea-level, 69; abundance of building sites, 123; nest of, 124; nesting habits, 125.
Rimu, 86, 96.
Robins, South Island, numerous and tame on Herekopere, 15; not on Piko-mamaku-iti, 32; two nests secured, 38; bird observed sitting, 39; tameness accounted for, 50; account of, 51-57; in Canterbury, 51; differences from North Island Robin, 53; nests of, 53, 54; sanitation of nest, 56; found on skirt of inland forest, 67; choice of site for nest, 142; owe lives to the Weka, 159.
Rock Hopper, 58.

Saddleback, 159.
Sanctuaries, 1, 7.
Sand dunes, 100, 109.
Sanitation of nests, 56, 74.
Scrub, 12, 21.
Sea Hawk, 15, 21, 32, 33, 38, 39, 40, 44, 100, 177.
Sea Swallow, 15, 21.
Sedum, 178.
Shag, Frilled, 163, 170.
Shag, Pied, 15, 163, 167, 185.
Shags, 154; outlawed, 162; rookeries, 164, feeding the young, 169; duration of nesting season, 171; under observation, 176.
Shag, Stewart Island, habitat of, 164; has transverse crest, 170; on Kane-te-toe, 175; rookery of, 178; eggs of, 185; breeding season, 185.
Shag, White-throated, 163, 171.
Shoveller, 151.
Skua, 40, 100.
Sparrow, 144, 149.
Spinach, New Zealand, 13.
Starling, 1.
Stewart Island, 7, 9, 10, 14, 52, 58, 63, 70, 85, 89, 99, 118, 124, 141, 146, 163, 188, 200.
Stilbocarp, on Piko-mamaku-iti, 32, 34.
Stilt, 108.
Stoat, 4, 150, 161.
Sutherland Falls, 161.
Swallow, Sea, 15, 21.

Table Hill, 68, 72, 84, 97, 111.
Te Anau, 161.
Te Kuri Penguin rookeries, 60.
Te Marama, or Herekopere, 11.
Tern, Caspian, 111, 151.
Thistles, Sow, 15.
Thrushes, 1, 159.
Titi Wainui, 16, 23, 25, 32, 39, 42.
Tit, Pied, 108, 187.
Tit, Yellow-breast, 15, 32, 35, 55, 67, 71, 86, 108, 129, 159, 187, 192, 195.
Totara, 76, 142.
Tuis, 15, 32, 55, 67, 70, 129, 141, 143, 147, 159, 193.
Tutira, 68, 71, 74, 97, 133, 145, 151, 161, 199, 200.

Ulva, 35, 52, 127, 141, 144.

Vermin, 4, 5, 158, 161.
Veronica, 13.

Warblers, 55, 67, 71, 86, 129, 159.
Wax Eye, 15.
Weasels, 4, 150, 161.
Weka, on Herekopere, 15; rats follow extermination of, 51; distributed throughout the country, 68; concentrate on edges of bush and on flats, 69; discovery of the Kaka's nest, 78; haunt mosses and ferns, 86; accused of eating a Kiwi egg, 94; feathers used by Fern Birds in nidification, 119; stricter protection of desirable, 148; account of, 149-161; inspector-general of nuisances, 152; his insatiable curiosity, 152; his guilty conscience, 154; his thievishness,

154; his fearlessness, 158; plumage of Stewart I. species, 160; calls and notes, 160; food of, 160.
Westland, 127.
Westland National Park, 7, 141, 200.
Whare, Rakiahua, 114.
White Head, 159.
Wind-hover, 40.
Wind, prevalent at Mason Bay, 104.
Woods, of autumn and spring, 66-71.
Wren, English, 149.
Wrens, 159.

Yellow Head, 159.

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